

Elastic Load Balance

API Reference

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1 Before You Start

Welcome to *Elastic Load Balance API Reference*. ELB distributes incoming traffic across backend servers based on the routing rules you define. ELB expands the service capabilities of applications and improves their availability by eliminating single points of failure (SPOFs).

This document describes how to use application programming interfaces (APIs) to perform operations on load balancers and associated resources, such as creating, querying, deleting, and updating a load balancer. For details about all supported operations, see [API Overview](#).

If you plan to access load balancers and associated resources through an API, ensure that you are familiar with ELB concepts. For details, see [Service Overview](#).

ELB supports Representational State Transfer (REST) APIs, allowing you to call APIs using HTTPS. For details about API calling, see [Calling APIs](#).

Additionally, ELB offers software development kits (SDKs) for multiple programming languages. For how to use SDKs, see [Huawei Cloud SDKs](#).

Constraints

- The numbers of load balancers and associated resources that you can create are determined by your quotas. To view or increase the quota, see [What Is Quota?](#)
- For more constraints, see the description of each API.

Endpoints

An endpoint is the **request address** for calling an API. Endpoints vary depending on services and regions. For the endpoints of ELB, see [Regions and Endpoints](#).

Concepts

- Account
An account is created upon successful signing up. The account has full access permissions for all of its cloud services and resources. It can be used to reset user passwords and grant user permissions. The account is a payment entity, which should not be used directly to perform routine management. To ensure

account security, create Identity and Access Management (IAM) users and grant them permissions for routine management.

- User

An IAM user is created by an account in IAM to use cloud services. Each IAM user has its own identity credentials (password and access keys).

API authentication requires information such as the account name, username, and password.

- Region

Regions are divided based on geographical location and network latency. Public services, such as Elastic Cloud Server (ECS), Elastic Volume Service (EVS), Object Storage Service (OBS), Virtual Private Cloud (VPC), Elastic IP (EIP), and Image Management Service (IMS), are shared within the same region. Regions are classified into universal regions and dedicated regions. A universal region provides universal cloud services for common tenants. A dedicated region provides specific services for specific tenants.

For details, see [Region and AZ](#).

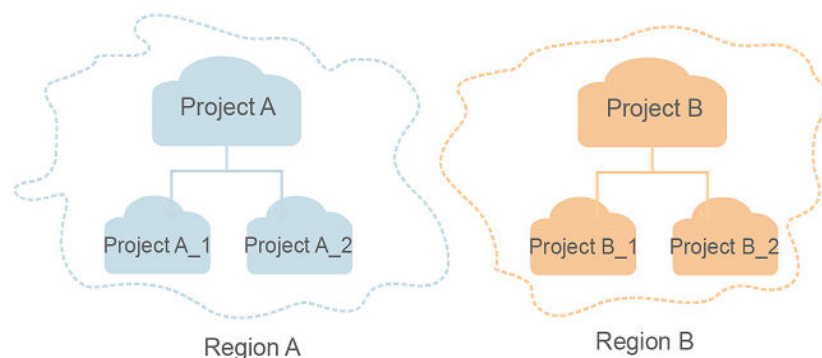
- AZ

An AZ comprises of one or more physical data centers equipped with independent ventilation, fire, water, and electricity facilities. Computing, network, storage, and other resources in an AZ are logically divided into multiple clusters. AZs within a region are interconnected using high-speed optical fibers to allow you to build cross-AZ high-availability systems.

- Project

A project corresponds to a region. Default projects are defined to group and physically isolate resources (including computing, storage, and network resources) across regions. Users can be granted permissions in a default project to access all resources under their accounts in the region associated with the project. If you need more refined access control, create subprojects under a default project and create resources in subprojects. Then you can assign users the permissions required to access only the resources in the specific subprojects.

Figure 1-1 Project isolation model



- Enterprise project

Enterprise projects group and manage resources across regions. Resources in different enterprise projects are logically isolated. An enterprise project can contain resources of multiple regions, and resources can be added to or removed from enterprise projects.

For details about enterprise projects and about how to obtain enterprise project IDs, see [Enterprise Management User Guide](#).

2 API Overview

A combination of these types of APIs allows you to use all functions provided by ELB. [Table 2-1](#) describes the APIs provided by ELB.

Table 2-1 ELB APIs

Type	Resource	Description
APIs (Dedicated load balancers)	Load balancer	Creates, updates, and deletes a load balancer, queries the details of a load balancer, lists load balancers, and queries the status tree for a load balancer.
	Certificate	Creates, modifies, and deletes a certificate, queries the details of a certificate, and lists certificates.
	Security policy	Adds, modifies, and deletes a security policy, queries the details of a security policy, and lists security policies.
	IP address group	Configures, modifies, and deletes an IP address group, queries the details of an IP address group, and lists IP address groups.
	Listener	Adds, modifies, and deletes a listener, queries the details of a listener, and lists listeners.
	Backend server group	Adds, modifies, and deletes a backend server group, queries the details of a backend server group, and lists backend server groups.
	Backend server	Adds, modifies, and deletes a backend server, queries the details of a backend server, and lists backend servers.
	Health check	Configures, modifies, and disables a health check, queries the details of a health check, and lists health checks.

Type	Resource	Description
	Forwarding policy	Adds, updates, and deletes a forwarding policy, queries the details of a forwarding policy, lists forwarding policies, and updates forwarding policy priorities.
	Forwarding rule	Adds, modifies, and deletes a forwarding rule, queries the details of a forwarding rule, and lists forwarding rules.
Shared load balancer APIs	Load balancer	Creates, updates, and deletes a load balancer, queries the details of a load balancer, lists load balancers, and queries the status tree for a load balancer.
	Listener	Adds, updates, and deletes a listener, queries the details of a listener, and lists listeners.
	Backend server group	Adds, updates, and deletes a backend server group, queries the details of a backend server group, and lists backend server groups.
	Backend server	Adds, updates, and removes a backend server, queries the details of a backend server, and lists backend servers.
	Health check	Configures, updates, and disables a health check, queries the details of a health check, and lists health checks.
	Forwarding policy	Adds, updates, and deletes a forwarding policy, queries the details of a forwarding policy, and lists forwarding policies.
	Forwarding rule	Adds, updates, and deletes a forwarding rule, queries the details of a forwarding rule, and lists forwarding rules.
	Whitelist	Creates, updates, and deletes a whitelist, queries the details of a whitelist, and lists whitelists.
	SSL certificate	Creates, modifies, deletes a certificate, queries the details of a certificate, and lists certificates.
Shared load balancer APIs (OpenStack)	Load balancer	Creates, updates, and deletes a load balancer, queries the details of a load balancer, lists load balancers, and queries the status tree for a load balancer.
	Listener	Adds, updates, and deletes a listener, queries the details of a listener, and lists listeners.

Type	Resource	Description
	Backend server group	Adds, updates, and deletes a backend server group, queries the details of a backend server group, and lists backend server groups.
	Backend server	Adds, updates, and removes a backend server, queries the details of a backend server, and lists backend servers.
	Health check	Configures, updates, and disables a health check, queries the details of a health check, and lists health checks.
	Forwarding policy	Adds, updates, and deletes a forwarding policy, queries the details of a forwarding policy, and lists forwarding policies.
	Forwarding rule	Adds, updates, and deletes a forwarding rule, queries the details of a forwarding rule, and lists forwarding rules.
	Whitelist	Creates, updates, and deletes a whitelist, queries the details of a whitelist, and lists whitelists.
	SSL certificate	Creates, modifies, deletes a certificate, queries the details of a certificate, and lists certificates.
	Tag	Adds a tag to and deletes a tag from a load balancer, batch adds and deletes load balancer tags, lists all tags of a load balancer, lists tags of all load balancers, queries load balancers by tag, adds a tag to and deletes a tag from a listener, batch adds and deletes listener tags, lists all tags of a listener, lists tags of all listeners, and queries listeners by tag.

3

Selecting an API Version

Elastic Load Balance (ELB) provides two versions of APIs: V2 and V3. For details about how to select an API version, see [Table 3-1](#). For details about the overall APIs and their functions, see [API Overview](#).

Table 3-1 ELB API versions

API Version	Description	Load Balancer Type
V3	- Can be used to perform all operations on dedicated load balancers. - Can be used to perform all operations on existing shared load balancers except for creating new ones.	Dedicated load balancers
V2	Can be used to perform all operations on shared load balancers.	Shared load balancers

4 Calling APIs

4.1 Making an API Request

This section describes the structure of a REST API request, and uses the IAM API for [creating an IAM user](#) as an example to demonstrate how to call an API.

Request URI

A request URI is in the following format:

{URI-scheme}://{Endpoint}/{resource-path}?{query-string}

Although a request URI is included in the request header, most programming languages or frameworks require the request URI to be transmitted separately.

Table 4-1 URI parameter description

Parameter	Description
URI-scheme	Protocol used to transmit requests. All APIs use HTTPS.
Endpoint	Domain name or IP address of the server bearing the REST service. The endpoint varies between services in different regions. It can be obtained from Regions and Endpoints . For example, the endpoint of IAM in region CN-Hong Kong is iam.ap-southeast-1.myhuaweicloud.com .
resource-path	Access path of an API for performing a specified operation. Obtain the path from the URI of an API. For example, the resource-path of the API used to obtain a user token is /v3/auth/tokens .
query-string	Query parameter, which is optional. Ensure that a question mark (?) is included before each query parameter that is in the format of <i>Parameter name=Parameter value</i> . For example, ?limit=10 indicates that a maximum of 10 data records will be displayed.

IAM is a global service. You can create an IAM user using the endpoint of IAM in any region. For example, to create an IAM user in the **CN-Hong Kong** region, obtain the endpoint of IAM (**iam.ap-southeast-1.myhuaweicloud.com**) for this region and the **resource-path** (**/v3.0/OS-USER/users**) in the URI of the API for **creating an IAM user**. Then construct the URI as follows:

```
https://iam.ap-southeast-1.myhuaweicloud.com/v3.0/OS-USER/users
```

Figure 4-1 Example URI



NOTE

To simplify the URI display in this document, each API is provided only with a **resource-path** and a request method. The **URI-scheme** of all APIs is **HTTPS**, and the endpoints of all APIs in the same region are identical.

Request Methods

The HTTP protocol defines the following request methods that can be used to send a request to the server.

Table 4-2 HTTP methods

Method	Description
GET	Requests the server to return specified resources.
PUT	Requests the server to update specified resources.
POST	Requests the server to add resources or perform special operations.
DELETE	Requests the server to delete specified resources, for example, an object.
HEAD	Same as GET except that the server must return only the response header.
PATCH	Requests the server to update partial content of a specified resource. If the resource does not exist, a new resource will be created.

For example, in the case of the API for **creating an IAM user**, the request method is **POST**. An example request is as follows:

```
POST https://iam.ap-southeast-1.myhuaweicloud.com/v3.0/OS-USER/users
```


Request Header

You can also add additional header fields to a request, such as the fields required by a specified URI or HTTP method. For example, to request for the authentication information, add **Content-Type**, which specifies the request body type.

Common request header fields are as follows.

Table 4-3 Common request header fields

Parameter	Description	Mandatory	Example Value
Host	Specifies the server domain name and port number of the resources being requested. The value can be obtained from the URL of the service API. The value is in the format of <i>Hostname:Port number</i> . If the port number is not specified, the default port is used. The default port number for https is 443 .	No This field is mandatory for AK/SK authentication.	code.test.com or code.test.com:443
Content-Type	Specifies the type (or format) of the message body. The default value application/json is recommended. Other values of this field will be provided for specific APIs if any.	Yes	application/json
Content-Length	Specifies the length of the request body. The unit is byte.	No	3495
X-Project-Id	Specifies the project ID. Obtain the project ID by following the instructions in Obtaining a Project ID .	No This field is mandatory for requests that use AK/SK authentication in the Dedicated Cloud (DeC) scenario or multi-project scenario.	e9993fc787d94b6c886cbaa340f9c0f4

Parameter	Description	Mandatory	Example Value
X-Auth-Token	Specifies the user token. It is a response to the API for obtaining a user token (This is the only API that does not require authentication). After the request is processed, the value of X-Subject-Token in the response header is the token value.	No This field is mandatory for token authentication.	The following is part of an example token: MIIPAgYJKoZlhvc NAQcCo...ggg1B BIINPXsidG9rZ

 NOTE

In addition to supporting authentication using tokens, APIs support authentication using AK/SK, which uses SDKs to sign a request. During the signature, the **Authorization** (signature authentication) and **X-Sdk-Date** (time when a request is sent) headers are automatically added in the request.

For more details, see "Authentication Using AK/SK" in [Authentication](#).

The following shows an example request of the API for [creating an IAM user](#) when AK/SK authentication is used:

```
POST https://iam.ap-southeast-1.myhuaweicloud.com/v3.0/OS-USER/users
Content-Type: application/json
X-Sdk-Date: 20240416T095341Z
Authorization: SDK-HMAC-SHA256 Access=*****, SignedHeaders=content-type;host;x-sdk-date,
Signature=*****
```

(Optional) Request Body

This part is optional. A request body is generally sent in a structured format (for example, JSON or XML), which is specified by **Content-Type** in the request header. It is used to transfer content other than the request header. If the request body contains full-width characters, these characters must be coded in UTF-8.

The request body varies depending on APIs. Certain APIs do not require the request body, such as the APIs requested using the GET and DELETE methods.

The following shows an example request (a request body included) of the API for [creating an IAM user](#). You can learn about request parameters and related description from this example. The bold parameters need to be replaced for a real request.

- **accountid**: account ID of an IAM user
- **username**: name of an IAM user
- **email**: email of an IAM user
- *********: login password of an IAM user

```
POST https://iam.ap-southeast-1.myhuaweicloud.com/v3.0/OS-USER/users
Content-Type: application/json
X-Sdk-Date: 20240416T095341Z
```

```
Authorization: SDK-HMAC-SHA256 Access=*****, SignedHeaders=content-type;host;x-sdk-date,  
Signature=*****
```

```
{  
  "user": {  
    "domain_id": "accountid",  
    "name": "username",  
    "password": "*****",  
    "email": "email",  
    "description": "IAM User Description"  
  }  
}
```

If all data required for the API request is available, you can send the request to call the API through [curl](#), [Postman](#), or coding.

4.2 Authentication

Requests for calling an API can be authenticated using either of the following methods:

- AK/SK authentication: Requests are encrypted using AK/SK pairs. AK/SK authentication is recommended because it is more secure than token authentication.
- Token authentication: Requests are authenticated using tokens.

AK/SK Authentication

NOTE

- AK/SK authentication supports API requests with a body not larger than 12 MB. For API requests with a larger body, token authentication is recommended.
- An AK/SK pair can either be permanent or temporary. If it is temporary, the **X-Security-Token** field must be included in the request header. The value is the security token of the temporary AK/SK pair.
- API Gateway checks the time format and compares the request time with the time when API Gateway received the request. If the time difference exceeds 15 minutes, API Gateway will reject the request. So, the local time on the client must be synchronized with the clock server to avoid a large offset in the value of **X-Sdk-Date** in the request header.

In AK/SK authentication, an AK/SK pair is used to sign requests and the signature is then added to the requests for authentication.

- AK: access key ID, which is a unique identifier used in conjunction with a secret access key to sign requests cryptographically.
- SK: secret access key, which is used in conjunction with an AK to sign requests cryptographically. It identifies a request sender and prevents the request from being modified.

In AK/SK authentication, you can use an AK/SK pair to sign requests based on the signature algorithm or using the signing SDK. For details about how to sign requests and use the signing SDK, see [API Request Signing Guide](#).

NOTE

The signing SDK is only used for signing requests and is different from the SDKs provided by services.

Token Authentication

NOTE

- A token remains valid for 24 hours after it is generated. You can cache a token and reuse it for authentication instead of generating a new one each time.
- Before using a token, ensure that it has sufficient time remaining before expiration. Using a near-expiry token may cause API call failures.

A token specifies temporary permissions in a computer system. During API authentication using a token, the token is added to requests to get permissions for calling the API. You can obtain a token by calling the [Obtaining a User Token](#) API.

IMS is a project-level service. When you call the API, set **auth.scope** in the request body to **project**.

```
{
  "auth": {
    "identity": {
      "methods": [
        "password"
      ],
      "password": {
        "user": {
          "name": "username", // IAM user name
          "password": $ADMIN_PASS, // IAM user password. You are advised to store it in ciphertext in
the configuration file or an environment variable and decrypt it when needed to ensure security.
          "domain": {
            "name": "domainname" // Name of the account that the IAM user belongs to
          }
        }
      }
    },
    "scope": {
      "project": {
        "name": "xxxxxxx" // Project name
      }
    }
  }
}
```

After a token is obtained, the **X-Auth-Token** header field must be added to requests to specify the token when calling other APIs. For example, if the token is **ABCDEFGH....**, **X-Auth-Token: ABCDEFGH....** can be added to a request as follows:

```
POST https://iam.ap-southeast-1.myhuaweicloud.com/v3.0/OS-USER/users
Content-Type: application/json
X-Auth-Token: ABCDEFGH....
```

4.3 Response

Status Code

After sending a request, you will receive a response, including a status code, response header, and response body.

A status code is a group of digits, ranging from 1xx to 5xx. It indicates the status of a request. For more information, see [Status Codes](#).

For example, if status code **201** is returned for calling the API used to **create an IAM user**, the request is successful.

Response Header

Similar to a request, a response also has a header, for example, **Content-Type**.

Figure 4-2 shows the response header for the API used to **create an IAM user**.

NOTE

For security purposes, you are advised to set the token in ciphertext in configuration files or environment variables and decrypt it when using it.

Figure 4-2 Header fields of the response to the request for creating an IAM user

```
"X-Frame-Options": "SAMEORIGIN",
"X-IAM-ETag-id": "2562365939-d8f6f12921974cb097338ac11fcec8a",
"Transfer-Encoding": "chunked",
"Strict-Transport-Security": "max-age=31536000; includeSubdomains;",
"Server": "api-gateway",
"X-Request-Id": "af2953f2bcc67a42325a69a19e6c32a2",
"X-Content-Type-Options": "nosniff",
"Connection": "keep-alive",
"X-Download-Options": "noopen",
"X-XSS-Protection": "1; mode=block;",
"X-IAM-Trace-Id": "token_ null_af2953f2bcc67a42325a69a19e6c32a2",
"Date": "Tue, 21 May 2024 09:03:40 GMT",
"Content-Type": "application/json; charset=utf8"
```

(Optional) Response Body

The body of a response is often returned in a structured format (for example, JSON or XML) as specified in the **Content-Type** header field. The response body transfers content except the response header.

The following shows part of the response body for the API used to **create an IAM user**.

```
{
  "user": {
    "id": "c131886aec...",
    "name": "IAMUser",
    "description": "IAM User Description",
    "areacode": "",
    "phone": "",
    "email": "***@***.com",
    "status": null,
    "enabled": true,
    "pwd_status": false,
    "access_mode": "default",
    "is_domain_owner": false,
    "xuser_id": "",
    "xuser_type": "",
    "password_expires_at": null,
    "create_time": "2024-05-21T09:03:41.000000",
    "domain_id": "d78cbac1.....",
    "xdomain_id": "30086000.....",
    "xdomain_type": ""
  }
}
```

```
    "default_project_id": null  
  }  
}
```

If an error occurs during API calling, an error code and a message will be displayed. The following shows an error response body.

```
{  
  "error_msg": "The request message format is invalid.",  
  "error_code": "IMG.0001"  
}
```

In the response body, **error_code** is an error code, and **error_msg** provides information about the error.

5 APIs (V3)

5.1 API Version

5.1.1 Querying API Versions

Function

This API is used to query all available ELB API versions. Generally, APIs of a later version (v3 is the latest version) support more features than those of an earlier version.

Note the following when using APIs of different versions:

- The API (POST /v3/{project_id}/elb/loadbalancers) cannot be used to create shared load balancers. To create a shared load balancer, you can call v2/v2.0 API, the API (/v3/{project_id}/elb/loadbalancers/batch-create) to batch create load balancers, or the API (/v3/{project_id}/elb/loadbalancers/{loadbalancer_id}/clone) to copy a load balancer.
- Other v3 APIs can be used to manage both dedicated and shared load balancers and their associated resources. For example, you can call the API (POST /v3/{project_id}/elb/listeners) to add a listener to a shared load balancer. However, some features of dedicated load balancers are not supported. For details, see each API description.

Calling Method

For details, see [Calling APIs](#).

URI

GET /versions

Request Parameters

None

Response Parameters

Status code: 200

Table 5-1 Response body parameters

Parameter	Type	Description
versions	Array of ApiVersionInfo objects	Definition: Lists the available API versions.

Table 5-2 ApiVersionInfo

Parameter	Type	Description
id	String	Definition: Specifies the API version. Range: The value can be v3 , v2 , or v2.0 in descending order.
status	String	Definition: Specifies the status of the API version. Range: • CURRENT: current version, which is the latest supported API version. • STABLE: stable version • DEPRECATED: discarded version

Example Requests

Querying API versions of a load balancer

```
GET https://{ELB_Endpoint}/versions
```

Example Responses

Status code: 200

Successful request.

```
{
  "versions": [ {
    "id": "v3",
    "status": "CURRENT"
  }, {
    "id": "v2",
    "status": "STABLE"
  }, {
    "id": "v2.0",
    "status": "STABLE"
  } ]
}
```


SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListApiVersionsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");

        ICredential auth = new BasicCredentials()
            .withAk(ak)
            .withSk(sk);

        ElbClient client = ElbClient.newBuilder()
            .withCredential(auth)
            .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
            .build();
        ListApiVersionsRequest request = new ListApiVersionsRequest();
        try {
            ListApiVersionsResponse response = client.listApiVersions(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
```

```
variables and decrypted during use to ensure security.
# In this example, AK and SK are stored in environment variables for authentication. Before running this
example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]

credentials = BasicCredentials(ak, sk)

client = ElbClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(ElbRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = ListApiVersionsRequest()
    response = client.list_api_versions(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        Build()

    client := elb.NewElbClient(
        elb.ElbClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListApiVersionsRequest{}
    response, err := client.ListApiVersions(request)
    if err == nil {
        fmt.Printf("%v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

5.2 Quota

5.2.1 Querying Quotas

Function

This API is used to query the quotas of load balancers and related resources in a specific project. The API returns only the total quota, not the used quota. To query the used quota, you can call the API (GET /v3/{project_id}/elb/quotas/details) to query quota usage details.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v3/{project_id}/elb/quotas

Table 5-3 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition: Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID . Constraints: N/A Range: The value can contain a maximum of 32 characters, including digits and lowercase letters. Default value: N/A

Request Parameters

Table 5-4 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition: Specifies the token used for IAM authentication. Constraints: N/A Range: N/A Default value: N/A

Response Parameters

Status code: 200

Table 5-5 Response body parameters

Parameter	Type	Description
request_id	String	Definition: Specifies the request ID. Range: The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-).
quota	Quota object	Definition: Specifies the quotas of load balancers and associated resources. Only the total quotas are returned. Remaining available quotas will not be returned.

Table 5-6 Quota

Parameter	Type	Description
project_id	String	Definition: Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID . Range: The value can contain a maximum of 32 characters, including digits and lowercase letters.

Parameter	Type	Description
loadbalancer	Integer	Definition: Specifies the load balancer quota. Range: • If the value is greater than or equal to 0, it indicates the current quota. • -1 indicates that the quota is not limited.
certificate	Integer	Definition: Specifies the certificate quota. Range: • If the value is greater than or equal to 0, it indicates the current quota. • -1 indicates that the quota is not limited.
listener	Integer	Definition: Specifies the listener quota. Range: • If the value is greater than or equal to 0, it indicates the current quota. • -1 indicates that the quota is not limited.
l7policy	Integer	Definition: Specifies the forwarding policy quota. Range: • If the value is greater than or equal to 0, it indicates the current quota. • -1 indicates that the quota is not limited.
condition_per_policy	Integer	Definition: Specifies the maximum number of forwarding conditions per forwarding policy. Range: • If the value is greater than or equal to 0, it indicates the current quota. • -1 indicates that the quota is not limited.

Parameter	Type	Description
pool	Integer	Definition: Specifies the backend server group quota. Range: • If the value is greater than or equal to 0, it indicates the current quota. • -1 indicates that the quota is not limited.
healthmonitor	Integer	Definition: Specifies the health check quota. Range: • If the value is greater than or equal to 0, it indicates the current quota. • -1 indicates that the quota is not limited.
member	Integer	Definition: Specifies the backend server quota. Range: • If the value is greater than or equal to 0, it indicates the current quota. • -1 indicates that the quota is not limited.
members_per_pool	Integer	Definition: Specifies the maximum number of backend servers in a backend server group. Range: • If the value is greater than or equal to 0, it indicates the current quota. • -1 indicates that the quota is not limited.
listeners_per_pool	Integer	Definition: Specifies the maximum number of listeners that can be associated with a backend server group. Range: • If the value is greater than or equal to 0, it indicates the current quota. • -1 indicates that the quota is not limited.

Parameter	Type	Description
ipgroup	Integer	Definition: Specifies the IP address group quota. Range: - If the value is greater than or equal to 0, it indicates the current quota. -1 indicates that the quota is not limited.
ipgroup_bindings	Integer	Definition: Specifies the maximum number of listeners that can be associated with an IP address group. Range: - If the value is greater than or equal to 0, it indicates the current quota. -1 indicates that the quota is not limited.
ipgroup_max_length	Integer	Definition: Specifies the maximum number of IP entries that can be added to an IP address group. Range: - If the value is greater than or equal to 0, it indicates the current quota. -1 indicates that the quota is not limited.
ipgroups_per_listener	Integer	Definition: Specifies the maximum number of IP address groups that can be associated with a listener. Range: - If the value is greater than or equal to 0, it indicates the current quota. -1 indicates that the quota is not limited.
security_policy	Integer	Definition: Specifies the custom security policy quota. Range: - If the value is greater than or equal to 0, it indicates the current quota. -1 indicates that the quota is not limited.

Parameter	Type	Description
listeners_per_load_balancer	Integer	Definition: Specifies the maximum number of listeners that can be associated with a load balancer. Range: • If the value is greater than or equal to 0, it indicates the current quota. • -1 indicates that the quota is not limited. NOTE The maximum number of listeners that can be added to each load balancer is not limited, but it is recommended that the listeners not exceed the default quota.
pools_per_l7policy	Integer	Definition: Specifies the maximum number of backend server groups that can be associated with a forwarding policy. Range: • If the value is greater than or equal to 0, it indicates the current quota. • -1 indicates that the quota is not limited.
l7policies_per_listener	Integer	Definition: Specifies the maximum number of forwarding policies that can be associated with a listener. Range: • If the value is greater than or equal to 0, it indicates the current quota. • -1 indicates that the quota is not limited.
free_instance_members_per_pool	Integer	Definition: Specifies the maximum number of backend servers that can be added to a backend server group for free. Range: • If the value is greater than or equal to 0, it indicates the current quota. • -1 indicates that the quota is not limited.

Parameter	Type	Description
free_instance_listeners_per_loadbalancer	Integer	Definition: Specifies the maximum number of listeners that can be associated with a load balancer for free. Range: - If the value is greater than or equal to 0, it indicates the current quota. -1 indicates that the quota is not limited.

Example Requests

Querying the quotas of resources associated with a load balancer

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/quotas
```

Example Responses

Status code: 200

Successful request.

```
{
  "request_id" : "c6f3d7fe99bb1d8aa29e148097dab0d0",
  "quota" : {
    "member" : 10000,
    "members_per_pool" : 1000,
    "certificate" : -1,
    "l7policy" : 2000,
    "listener" : 1500,
    "loadbalancer" : 100000,
    "healthmonitor" : -1,
    "pool" : 5000,
    "ipgroup" : 1000,
    "ipgroup_bindings" : 50,
    "ipgroup_max_length" : 300,
    "ipgroups_per_listener" : 2,
    "security_policy" : 50,
    "project_id" : "060576798a80d5762fafc01a9b5eedc7",
    "condition_per_policy" : 10,
    "listeners_per_pool" : 50,
    "listeners_per_loadbalancer" : 50,
    "free_instance_listeners_per_loadbalancer" : 5,
    "free_instance_members_per_pool" : 10,
    "l7policies_per_listener" : 100,
    "pools_per_l7policy" : 5
  }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;
```

```
import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowQuotaSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        ElbClient client = ElbClient.newBuilder()
            .withCredential(auth)
            .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
            .build();
        ShowQuotaRequest request = new ShowQuotaRequest();
        try {
            ShowQuotaResponse response = client.showQuota(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.getenv("CLOUD_SDK_AK")
    sk = os.getenv("CLOUD_SDK_SK")
    projectId = "{project_id}"
```

```
credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(ElbRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = ShowQuotaRequest()
    response = client.show_quota(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := elb.NewElbClient(
        elb.ElbClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowQuotaRequest{}
    response, err := client.ShowQuota(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

5.2.2 Querying Quota Usage

Function

This API is used to query the current and used quotas of resources related to a load balancer.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v3/{project_id}/elb/quotas/details

Table 5-7 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition: Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID . Constraints: N/A Range: The value can contain a maximum of 32 characters, including digits and lowercase letters. Default value: N/A

Table 5-8 Query Parameters

Parameter	Mandatory	Type	Description
quota_key	No	Array of strings	Definition: Specifies the quota type. Multiple values can be used for query in the format of <i>quota_key=xxx&quota_key=xxx</i> . Constraints: N/A Range: loadbalancer, listener, ipgroup, pool, member, healthmonitor, l7policy, certificate, security_policy, listeners_per_loadbalancer, listeners_per_pool, members_per_pool, condition_per_policy, ipgroup_bindings, ipgroup_max_length, ipgroups_per_listener, pools_per_l7policy, l7policies_per_listener, free_instance_members_per_pool, or free_instance_listeners_per_loadbalancer Default value: N/A

Request Parameters

Table 5-9 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition: Specifies the token used for IAM authentication. Constraints: N/A Range: N/A Default value: N/A

Response Parameters

Status code: 200

Table 5-10 Response body parameters

Parameter	Type	Description
request_id	String	Definition: Specifies the request ID. Range: The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-).
quotas	Array of QuotaInfo objects	Definition: Specifies the resource quotas.

Table 5-11 QuotaInfo

Parameter	Type	Description
quota_key	String	Definition: Specifies the quota type. Range: loadbalancer, listener, ipgroup, pool, member, healthmonitor, l7policy, certificate, security_policy, listeners_per_loadbalancer, listeners_per_pool, members_per_pool, condition_per_policy, ipgroup_bindings, ipgroup_max_length, ipgroups_per_listener, pools_per_l7policy, l7policies_per_listener, free_instance_members_per_pool, or free_instance_listeners_per_loadbalancer
quota_limit	Integer	Definition: Specifies the total quota. Range: • If the value is greater than or equal to 0, it indicates the current quota. • -1 indicates that the quota is not limited.
used	Integer	Definition: Specifies the used quota. Range: greater than or equal to 0
unit	String	Definition: Specifies the quota unit. Range: count, indicating the number of resources

Example Requests

Querying the quota of a specific quota type

```
https://{ELB_Endpoint}/v3/06b9dc6cbf80d5952f18c0181a2f4654/elb/quotas/details?  
quota_key=members_per_pool&quota_key=loadbalancer
```

Example Responses

Status code: 200

Successful request.

```
{  
  "request_id" : "a396ad8e282d69d1afec6d437fe93c2d",  
  "quotas" : [ {  
    "quota_key" : "members_per_pool",  
    "used" : 992,  
    "quota_limit" : 1000,  
    "unit" : "count"  
  }, {  
    "quota_key" : "security_policy",  
    "used" : 11,  
    "quota_limit" : 50,  
    "unit" : "count"  
  }, {  
    "quota_key" : "ipgroup_max_length",  
    "used" : 3,  
    "quota_limit" : 300,  
    "unit" : "count"  
  }, {  
    "quota_key" : "listener",  
    "used" : 803,  
    "quota_limit" : 1500,  
    "unit" : "count"  
  }, {  
    "quota_key" : "pool",  
    "used" : 1009,  
    "quota_limit" : 5000,  
    "unit" : "count"  
  }, {  
    "quota_key" : "certificate",  
    "used" : 608,  
    "quota_limit" : -1,  
    "unit" : "count"  
  }, {  
    "quota_key" : "loadbalancer",  
    "used" : 752,  
    "quota_limit" : 100000,  
    "unit" : "count"  
  }, {  
    "quota_key" : "ipgroup",  
    "used" : 11,  
    "quota_limit" : 1000,  
    "unit" : "count"  
  }, {  
    "quota_key" : "ipgroup_bindings",  
    "used" : 2,  
    "quota_limit" : 50,  
    "unit" : "count"  
  }, {  
    "quota_key" : "member",  
    "used" : 3022,  
    "quota_limit" : 10000,  
    "unit" : "count"  
  }, {  
    "quota_key" : "listeners_per_loadbalancer",  
    "used" : 0,  
    "unit" : "count"  
  } ]  
}
```

```
"quota_limit" : 50,
"unit" : "count"
}, {
"quota_key" : "l7policy",
"used" : 148,
"quota_limit" : 2000,
"unit" : "count"
}, {
"quota_key" : "healthmonitor",
"used" : 762,
"quota_limit" : -1,
"unit" : "count"
}, {
"quota_key" : "ipgroups_per_listener",
"used" : 5,
"quota_limit" : 10,
"unit" : "count"
}, {
"quota_key" : "pools_per_l7policy",
"used" : 5,
"quota_limit" : 100,
"unit" : "count"
}, {
"quota_key" : "l7policies_per_listener",
"used" : 5,
"quota_limit" : 100,
"unit" : "count"
}, {
"quota_key" : "free_instance_members_per_pool",
"used" : 17,
"quota_limit" : 50,
"unit" : "count"
}, {
"quota_key" : "free_instance_listeners_per_loadbalancer",
"used" : 4,
"quota_limit" : 10,
"unit" : "count"
}
}]
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListQuotaDetailsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
    }
}
```



```
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
    .withProjectId(projectId)
    .withAk(ak)
    .withSk(sk);

ElbClient client = ElbClient.newBuilder()
    .withCredential(auth)
    .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
    .build();

ListQuotaDetailsRequest request = new ListQuotaDetailsRequest();
try {
    ListQuotaDetailsResponse response = client.listQuotaDetails(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskgelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskgelb.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = ElbClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(ElbRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListQuotaDetailsRequest()
        response = client.list_quota_details(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := elb.NewElbClient(
        elb.ElbClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListQuotaDetailsRequest{}
    response, err := client.ListQuotaDetails(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

5.3 AZ

5.3.1 Querying AZs

Function

This API is used to query all available AZs when you create a load balancer.

Note the following when you create a load balancer:

- One set of AZs is returned by default. When you create a dedicated load balancer, you can select one or more AZs only in this set.
- If **loadbalancer_id** is specified, the set of AZs in the cluster where the load balancer resides is returned.
- In special scenarios, dedicated load balancers must be created in specific AZs. In the returned one or more sets of AZs, you can select as many AZs as you want as long as the selected AZs are in the same set. For example, if two sets **[az1,az2]** and **[az2,az3]** are returned, you can select **az1** and **az2** or **az2** and **az3**, but cannot select **az1** and **az3**.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v3/{project_id}/elb/availability-zones

Table 5-12 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition: Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID . Constraints: N/A Range: The value can contain a maximum of 32 characters, including digits and lowercase letters. Default value: N/A

Table 5-13 Query Parameters

Parameter	Mandatory	Type	Description
public_border_group	No	String	Definition: Specifies the public border group. Constraints: N/A Range: • center: public border group of the central site • Edge site name: public border group of an edge site Default value: N/A
loadbalancer_id	No	String	Definition: Specifies the load balancer ID. Constraints: N/A Range: N/A Default value: N/A

Request Parameters

Table 5-14 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition: Specifies the token used for IAM authentication. Constraints: N/A Range: N/A Default value: N/A

Response Parameters

Status code: 200

Table 5-15 Response body parameters

Parameter	Type	Description
request_id	String	Definition: Specifies the request ID. Range: The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-).

Parameter	Type	Description
availability_zones	Array<Array<AvailabilityZone>>	Definition: Specifies the AZs that are available during load balancer creation. For example, in [az1,az2] and [az2,az3] sets, you can select az1 and az2 or az2 and az3, but cannot select az1 and az3. Range: N/A

Table 5-16 AvailabilityZone

Parameter	Type	Description
code	String	Definition: Specifies the AZ code. Range: N/A
state	String	Definition: Specifies the AZ status. Range: ACTIVE.
protocol	Array of strings	Definition: Specifies the type of the flavors that is not sold out. Range: L4 indicates network load balancers are not sold out. L7 indicates application load balancers are not sold out.
public_border_group	String	Definition: Specifies the public border group. Range: - center: public border group of the central site - Edge site name: public border group of an edge site
category	Integer	Definition: Specifies the AZ category code. This parameter is used to identify the type of an edge AZ. Range: 0 (central AZs), 21 (HomeZones AZs), and 41 (edge AZs)
spec_code	String	Definition: Specifies the code of the product in the edge AZ. The product code is used to query the price before purchasing a load balancer on the management console. Range: N/A

Example Requests

Querying AZs where a load balancer works

```
GET https://{ELB_Endpoint}/v3/060576782980d5762f9ec014dd2f1148/elb/availability-zones
```

Example Responses

Status code: 200

Successful request.

```
{
  "availability_zones" : [ [ {
    "state" : "ACTIVE",
    "code" : "az1",
    "protocol" : [ "L4", "L7" ],
    "public_border_group" : "center",
    "spec_code" : null,
    "category" : 0
  }, {
    "state" : "ACTIVE",
    "code" : "az2",
    "protocol" : [ "L4" ],
    "public_border_group" : "center",
    "spec_code" : null,
    "category" : 0
  }, {
    "state" : "ACTIVE",
    "code" : "az3",
    "protocol" : [ "L7" ],
    "public_border_group" : "center",
    "spec_code" : null,
    "category" : 0
  }, {
    "state" : "ACTIVE",
    "code" : "homezone.az0",
    "protocol" : [ "L4" ],
    "public_border_group" : "homezone.azg",
    "spec_code" : null,
    "category" : 21
  } ] ],
  "request_id" : "0d799435-259e-459f-b2bc-0beee06f6a77"
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListAvailabilityZonesSolution {

    public static void main(String[] args) {
```

```
// The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before running
this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
    .withProjectId(projectId)
    .withAk(ak)
    .withSk(sk);

ElbClient client = ElbClient.newBuilder()
    .withCredential(auth)
    .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
    .build();
ListAvailabilityZonesRequest request = new ListAvailabilityZonesRequest();
try {
    ListAvailabilityZonesResponse response = client.listAvailabilityZones(request);
    System.out.println(response.toString());
} catch (ConnectionException e) {
    e.printStackTrace();
} catch (RequestTimeoutException e) {
    e.printStackTrace();
} catch (ServiceResponseException e) {
    e.printStackTrace();
    System.out.println(e.getHttpStatusCode());
    System.out.println(e.getRequestId());
    System.out.println(e.getErrorCode());
    System.out.println(e.getErrorMsg());
}
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.getenv("CLOUD_SDK_AK")
    sk = os.getenv("CLOUD_SDK_SK")
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = ElbClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(ElbRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListAvailabilityZonesRequest()
        response = client.list_availability_zones(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
```

```
print(e.request_id)
print(e.error_code)
print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := elb.NewElbClient(
        elb.ElbClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ListAvailabilityZonesRequest{}
    response, err := client.ListAvailabilityZones(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

5.4 Load Balancer Flavor

5.4.1 Querying Flavors

Function

This API is used to query all available load balancer flavors in a specific region. You can specify these Layer 4 or Layer 7 flavors when creating a dedicated load balancer.

Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page_reverse** are used for pagination query.
- Parameters **marker** and **page_reverse** take effect only when they are used together with parameter **limit**.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v3/{project_id}/elb/flavors

Table 5-17 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition: Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID . Constraints: N/A Range: The value can contain a maximum of 32 characters, including digits and lowercase letters. Default value: N/A

Table 5-18 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Definition: Specifies the ID of the last record on the previous page. Constraints: • This parameter must be used together with limit. • If the parameter is not specified, only resources on the first page are queried. • This parameter cannot be left blank or set to an invalid ID. Range: N/A Default value: N/A
limit	No	Integer	Definition: Specifies the number of records returned on each page. Constraints: N/A Range: 0 to 2000 Default value: 2000
page_reverse	No	Boolean	Definition: Specifies whether to use reverse query. Constraints: • This parameter must be used together with limit. • If page_reverse is set to true and you want to query the resources on the previous page, set the value of marker to the value of previous_marker. Range: • true: Query resources on the previous page. • false: Query resources on the next page. Default value: false

Parameter	Mandatory	Type	Description
id	No	Array of strings	Definition: Specifies the flavor ID. Multiple IDs can be used for query in the format of <i>id=xxx&id=xxx</i> . Constraints: N/A Range: N/A Default value: N/A
name	No	Array of strings	Definition: Specifies the flavor name. Multiple names can be used for query in the format of <i>name=xxx&name=xxx</i> . Constraints: N/A Range: N/A Default value: N/A
type	No	Array of strings	Definition: Specifies the flavor type. Range: • L4 indicates a Layer 4 flavor and L7 indicates a Layer 7 flavor. • gwlb indicates the flavor of a gateway load balancer. • L4_elastic indicates the minimum elastic flavor at Layer 4 and L7_elastic indicates the minimum elastic flavor at Layer 7. • L4_elastic_max indicates the maximum elastic flavor at Layer 4, gwlb_elastic_max indicates the maximum gateway elastic flavor, and L7_elastic_max indicates the maximum elastic flavor at Layer 7. Multiple types can be used for query in the format of <i>type=xxx&type=xxx</i> .

Parameter	Mandatory	Type	Description
shared	No	Boolean	Definition: Specifies whether to query the flavors available to all uses. Constraints: N/A Range: • true: Query the flavors available to all users. • false: Query the flavors only available to the current user. Default value: N/A
public_border_group	No	Array of strings	Definition: Specifies the public border group. Multiple public border groups can be queried in the format of <i>public_border_group=xxx&public_border_group=xxx</i> . Constraints: N/A Range: • center: public border group of the central site • Edge site name: public border group of an edge site Default value: N/A
category	No	Array of integers	Definition: Specifies the AZ category code. This parameter is used to identify the type of an edge AZ. Multiple categories can be used for query in the format of <i>category=xxx&category=xxx</i> . Constraints: N/A Range: 0 (central AZs), 21 (HomeZones AZs), and 41 (edge AZs) Default value: N/A

Parameter	Mandatory	Type	Description
list_all	No	Boolean	Definition: Whether to query all the maximum elastic flavors of a specific user. Constraints: N/A Range: • true: All the maximum elastic flavors defined by l4_elastic_max and l7_elastic_max are returned. • false: Only the largest elastic flavors will be returned. For Layer 4 load balancers, the flavor with highest cps value is returned. If the cps values are the same, the flavor with highest bandwidth value is returned. For Layer 7 load balancers, the flavor with highest https_cps value is returned. If the https_cps values are the same, the flavor with highest qps value is returned. Default value: N/A
flavor_sold_out	No	Boolean	Specifies whether load balancers of this flavor are unavailable. Constraints: N/A • true indicates load balancers of this flavor are unavailable. • false indicates load balancers of this flavor are available. Default value: N/A

Request Parameters

Table 5-19 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition: Specifies the token used for IAM authentication. Constraints: N/A Range: N/A Default value: N/A

Response Parameters

Status code: 200

Table 5-20 Response body parameters

Parameter	Type	Description
flavors	Array of Flavor objects	Definition: Specifies the flavor list.
page_info	PageInfo object	Definition: Specifies the pagination information.
request_id	String	Definition: Specifies the request ID. Range: The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-).

Table 5-21 Flavor

Parameter	Type	Description
id	String	Definition: Specifies the flavor ID. Range: N/A
info	FlavorInfo object	Definition: Specifies the flavor metrics. Range: N/A

Parameter	Type	Description
name	String	Definition: Specifies the flavor name. Range: Network load balancers have the following flavors: • L4_flavor.elb.s1.small: small I • L4_flavor.elb.s2.small: small II • L4_flavor.elb.s1.medium: medium I • L4_flavor.elb.s2.medium: medium II • L4_flavor.elb.s1.large: large I • L4_flavor.elb.s2.large: Large II • L4_flavor.elb.pro.max: elastic flavor at Layer 4 Application load balancers have the following flavors: • L7_flavor.elb.s1.small: small I • L7_flavor.elb.s2.small: small II • L7_flavor.elb.s1.medium: medium I • L7_flavor.elb.s2.medium: medium II • L7_flavor.elb.s1.large: large I • L7_flavor.elb.s2.large: Large II • L7_flavor.elb.s1.extra-large: extra-large I • L7_flavor.elb.s2.extra-large: extra-large II • L7_flavor.elb.pro.max: elastic flavor at Layer
shared	Boolean	Definition: Specifies whether the flavor is available to all users. Range: • true indicates that the flavor is available to all users. • false indicates that the flavor is available only to the current user.
project_id	String	Definition: Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID . Range: The value can contain a maximum of 32 characters, including digits and lowercase letters.

Parameter	Type	Description
type	String	Definition: Specifies the flavor type. Range: • L4 indicates a Layer 4 flavor and L7 indicates a Layer 7 flavor. • gwlb indicates the flavor of a gateway load balancer. • L4_elastic indicates the minimum elastic flavor at Layer 4 and L7_elastic indicates the minimum elastic flavor at Layer 7. This parameter has been discarded. Please do not use it. • L4_elastic_max indicates the maximum elastic flavor at Layer 4, gwlb_elastic_max indicates the maximum gateway elastic flavor, and L7_elastic_max indicates the maximum elastic flavor at Layer 7.
flavor_sold_out	Boolean	Definition: Specifies whether load balancers of this flavor cannot be purchased. Range: • true: • false:
public_border_group	String	Definition: Specifies the public border group. Range: • center: public border group of the central site • Edge site name: public border group of an edge site
category	Integer	Definition: Specifies the AZ category code. This parameter is used to identify the type of an edge AZ. Range: 0 (central AZs), 21 (HomeZones AZs), and 41 (edge AZs)

Table 5-22 FlavorInfo

Parameter	Type	Description
connection	Integer	Definition: Specifies the maximum number of concurrent connections per second. Unit: count Range: N/A
cps	Integer	Definition: Specifies the number of new connections per second. Unit: count Range: N/A
tls_connection	Integer	Definition: Specifies the maximum number of concurrent TLS connections per second. Unit: count Range: N/A
tls_cps	Integer	Definition: Specifies the maximum number of new TLS connections per second. Unit: count Range: N/A
qps	Integer	Definition: Specifies the number of queries per second (QPS). Unit: count. This parameter is available only for load balancers at Layer 7. Range: N/A
bandwidth	Integer	Definition: Specifies the bandwidth, in kbit/s. Range: N/A
lcu	Integer	Definition: Specifies the number of LCUs supported by the flavor. Unit: count Range: N/A NOTE An LCU measures the dimensions on which a dedicated load balancer routes the traffic. A higher value indicates better performance.
https_cps	Integer	Definition: Specifies the number of new HTTPS connections. This parameter is available only for load balancers at Layer 7. Unit: count Range: N/A

Table 5-23 PageInfo

Parameter	Type	Description
previous_marker	String	Definition: Specifies the ID of the first record in the pagination query result. If page_reverse is set to true , this parameter is used together to query resources on the previous page. Range: N/A
next_marker	String	Definition: Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page. Range: N/A
current_count	Integer	Definition: Specifies the number of records returned on the current page. Range: N/A

Example Requests

Querying load balancer flavors

```
GET https://{ELB_Endpoint}/v3/057ef081eb00d2732fd1c01a9be75e6f/elb/flavors?
limit=2&marker=179568ef-5ba4-4ca0-8c5e-5d581db779b1
```

Example Responses

Status code: 200

Successful request.

```
{
  "request_id" : "01e84c2750b7217e5903b3d3bc9a9fda",
  "flavors" : [ {
    "name" : "L7_flavor.basic.elb.s1.small",
    "shared" : true,
    "project_id" : "060576798a80d5762fafc01a9b5eedc7",
    "info" : {
      "bandwidth" : 50000,
      "connection" : 200000,
      "cps" : 2000,
      "https_cps" : 200,
      "lcu" : 10,
      "qps" : 4000
    },
    "id" : "037418d4-8c9e-40b8-9e54-70ff4848fd82",
    "type" : "L7_basic",
    "flavor_sold_out" : false,
    "public_border_group" : "center",
    "category" : 0
  }, {
    "name" : "L4_flavor.elb.s2.small",
    "shared" : true,
    "project_id" : "8d53f081ea24444aa95e2bfa942ef6ee",
    "info" : {
      "bandwidth" : 100000,
```

```
"connection" : 1000000,
"cps" : 20000,
"lcu" : 20
},
"id" : "03925294-4ae2-4cdb-b912-cf171e782095",
"type" : "L4",
"flavor_sold_out" : false,
"public_border_group" : "center",
"category" : 0
}],
"page_info" : {
  "next_marker" : "03925294-4ae2-4cdb-b912-cf171e782095",
  "previous_marker" : "037418d4-8c9e-40b8-9e54-70ff4848fd82",
  "current_count" : 2
}
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListFlavorsSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        ElbClient client = ElbClient.newBuilder()
            .withCredential(auth)
            .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
            .build();
        ListFlavorsRequest request = new ListFlavorsRequest();
        try {
            ListFlavorsResponse response = client.listFlavors(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
        }
    }
}
```

```
        System.out.println(e.getErrorCode());
        System.out.println(e.getErrorMsg());
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"

    credentials = BasicCredentials(ak, sk, projectId)

    client = ElbClient.new_builder() \
        .with_credentials(credentials) \
        .with_region(ElbRegion.value_of("<YOUR REGION>")) \
        .build()

    try:
        request = ListFlavorsRequest()
        response = client.list_flavors(request)
        print(response)
    except exceptions.ClientRequestException as e:
        print(e.status_code)
        print(e.request_id)
        print(e.error_code)
        print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
```

```
Build()

client := elb.NewElbClient(
    elb.ElbClientBuilder().
        WithRegion(region.ValueOf("<YOUR REGION>")).
        WithCredential(auth).
        Build())

request := &model.ListFlavorsRequest{}
response, err := client.ListFlavors(request)
if err == nil {
    fmt.Printf("%+v\n", response)
} else {
    fmt.Println(err)
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

5.4.2 Viewing the Details of a Flavor

Function

This API is used to view the details of a flavor.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v3/{project_id}/elb/flavors/{flavor_id}

Table 5-24 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition: Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID . Constraints: N/A Range: The value can contain a maximum of 32 characters, including digits and lowercase letters. Default value: N/A
flavor_id	Yes	String	Definition: Specifies the flavor ID. Constraints: N/A Range: N/A Default value: N/A

Request Parameters

Table 5-25 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition: Specifies the token used for IAM authentication. Constraints: N/A Range: N/A Default value: N/A

Response Parameters

Status code: 200

Table 5-26 Response body parameters

Parameter	Type	Description
request_id	String	Definition: Specifies the request ID. Range: The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-).

Parameter	Type	Description
flavor	Flavor object	Definition: Specifies the flavor.

Table 5-27 Flavor

Parameter	Type	Description
id	String	Definition: Specifies the flavor ID. Range: N/A
info	FlavorInfo object	Definition: Specifies the flavor metrics. Range: N/A
name	String	Definition: Specifies the flavor name. Range: Network load balancers have the following flavors: • L4_flavor.elb.s1.small: small I • L4_flavor.elb.s2.small: small II • L4_flavor.elb.s1.medium: medium I • L4_flavor.elb.s2.medium: medium II • L4_flavor.elb.s1.large: large I • L4_flavor.elb.s2.large: Large II • L4_flavor.elb.pro.max: elastic flavor at Layer 4 Application load balancers have the following flavors: • L7_flavor.elb.s1.small: small I • L7_flavor.elb.s2.small: small II • L7_flavor.elb.s1.medium: medium I • L7_flavor.elb.s2.medium: medium II • L7_flavor.elb.s1.large: large I • L7_flavor.elb.s2.large: Large II • L7_flavor.elb.s1.extra-large: extra-large I • L7_flavor.elb.s2.extra-large: extra-large II • L7_flavor.elb.pro.max: elastic flavor at Layer

Parameter	Type	Description
shared	Boolean	Definition: Specifies whether the flavor is available to all users. Range: • true indicates that the flavor is available to all users. • false indicates that the flavor is available only to the current user.
project_id	String	Definition: Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID . Range: The value can contain a maximum of 32 characters, including digits and lowercase letters.
type	String	Definition: Specifies the flavor type. Range: • L4 indicates a Layer 4 flavor and L7 indicates a Layer 7 flavor. • gwlb indicates the flavor of a gateway load balancer. • L4_elastic indicates the minimum elastic flavor at Layer 4 and L7_elastic indicates the minimum elastic flavor at Layer 7. This parameter has been discarded. Please do not use it. • L4_elastic_max indicates the maximum elastic flavor at Layer 4, gwlb_elastic_max indicates the maximum gateway elastic flavor, and L7_elastic_max indicates the maximum elastic flavor at Layer 7.
flavor_sold_out	Boolean	Definition: Specifies whether load balancers of this flavor cannot be purchased. Range: • true: • false:

Parameter	Type	Description
public_border_group	String	Definition: Specifies the public border group. Range: • center: public border group of the central site • Edge site name: public border group of an edge site
category	Integer	Definition: Specifies the AZ category code. This parameter is used to identify the type of an edge AZ. Range: 0 (central AZs), 21 (HomeZones AZs), and 41 (edge AZs)

Table 5-28 FlavorInfo

Parameter	Type	Description
connection	Integer	Definition: Specifies the maximum number of concurrent connections per second. Unit: count Range: N/A
cps	Integer	Definition: Specifies the number of new connections per second. Unit: count Range: N/A
tls_connection	Integer	Definition: Specifies the maximum number of concurrent TLS connections per second. Unit: count Range: N/A
tls_cps	Integer	Definition: Specifies the maximum number of new TLS connections per second. Unit: count Range: N/A
qps	Integer	Definition: Specifies the number of queries per second (QPS). Unit: count. This parameter is available only for load balancers at Layer 7. Range: N/A
bandwidth	Integer	Definition: Specifies the bandwidth, in kbit/s. Range: N/A

Parameter	Type	Description
lcu	Integer	Definition: Specifies the number of LCUs supported by the flavor. Unit: count Range: N/A NOTE An LCU measures the dimensions on which a dedicated load balancer routes the traffic. A higher value indicates better performance.
https_cps	Integer	Definition: Specifies the number of new HTTPS connections. This parameter is available only for load balancers at Layer 7. Unit: count Range: N/A

Example Requests

Querying the details of a flavor

```
GET https://{ELB_Endpoint}/v3/{project_id}/elb/flavors/{flavor_id}
```

Example Responses

Status code: 200

Successful request.

```
{
  "flavor" : {
    "shared" : true,
    "project_id" : "8d53f081ea2444aa95e2bfa942ef6ee",
    "info" : {
      "bandwidth" : 10000000,
      "connection" : 8000000,
      "cps" : 80000,
      "qps" : 160000,
      "lcu" : 100
    },
    "id" : "3588b525-63ed-4b8f-8a03-6aaa9ad1c36a",
    "name" : "L7_flavor.slb.s2.large",
    "type" : "L7",
    "flavor_sold_out" : false,
    "public_border_group" : "center",
    "category" : 0
  },
  "request_id" : "3b9fb516-b7bb-4760-9128-4a23dd36ae10"
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

```
package com.huaweicloud.sdk.test;
```

```
import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowFlavorSolution {

    public static void main(String[] args) {
        // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
        // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
        // environment variables and decrypted during use to ensure security.
        // In this example, AK and SK are stored in environment variables for authentication. Before running
        // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
        String ak = System.getenv("CLOUD_SDK_AK");
        String sk = System.getenv("CLOUD_SDK_SK");
        String projectId = "{project_id}";

        ICredential auth = new BasicCredentials()
            .withProjectId(projectId)
            .withAk(ak)
            .withSk(sk);

        ElbClient client = ElbClient.newBuilder()
            .withCredential(auth)
            .withRegion(ElbRegion.valueOf("<YOUR_REGION>"))
            .build();
        ShowFlavorRequest request = new ShowFlavorRequest();
        request.withFlavorId("{flavor_id}");
        try {
            ShowFlavorResponse response = client.showFlavor(request);
            System.out.println(response.toString());
        } catch (ConnectionException e) {
            e.printStackTrace();
        } catch (RequestTimeoutException e) {
            e.printStackTrace();
        } catch (ServiceResponseException e) {
            e.printStackTrace();
            System.out.println(e.getHttpStatusCode());
            System.out.println(e.getRequestId());
            System.out.println(e.getErrorCode());
            System.out.println(e.getErrorMsg());
        }
    }
}
```

Python

```
# coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    # variables and decrypted during use to ensure security.
    # In this example, AK and SK are stored in environment variables for authentication. Before running this
    # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak = os.environ["CLOUD_SDK_AK"]
    sk = os.environ["CLOUD_SDK_SK"]
    projectId = "{project_id}"
```

```
credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
    .with_credentials(credentials) \
    .with_region(ElbRegion.value_of("<YOUR REGION>")) \
    .build()

try:
    request = ShowFlavorRequest()
    request.flavor_id = "{flavor_id}"
    response = client.show_flavor(request)
    print(response)
except exceptions.ClientRequestException as e:
    print(e.status_code)
    print(e.request_id)
    print(e.error_code)
    print(e.error_msg)
```

Go

```
package main

import (
    "fmt"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
    elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
    "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
    region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
    // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
    // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
    // variables and decrypted during use to ensure security.
    // In this example, AK and SK are stored in environment variables for authentication. Before running this
    // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
    ak := os.Getenv("CLOUD_SDK_AK")
    sk := os.Getenv("CLOUD_SDK_SK")
    projectId := "{project_id}"

    auth := basic.NewCredentialsBuilder().
        WithAk(ak).
        WithSk(sk).
        WithProjectId(projectId).
        Build()

    client := elb.NewElbClient(
        elb.ElbClientBuilder().
            WithRegion(region.ValueOf("<YOUR REGION>")).
            WithCredential(auth).
            Build())

    request := &model.ShowFlavorRequest{}
    request.FlavorId = "{flavor_id}"
    response, err := client.ShowFlavor(request)
    if err == nil {
        fmt.Printf("%+v\n", response)
    } else {
        fmt.Println(err)
    }
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

5.5 Reserved IP Address

5.5.1 Calculating the Number of Reserved IP Addresses

Function

This API is used to calculate the number of reserved IP addresses in the following scenarios:

- To calculate the number of IP addresses required for creating a load balancer, specify **availability_zone_id** and optional parameters **l7_flavor_id**, **ip_target_enable**, and **ip_version**. Do not specify **loadbalancer_id**.
- To calculate the number of IP addresses required for adding the first Layer 7 listener to a load balancer, specify **loadbalancer_id** and do not specify other parameters.
- To calculate the number of IP addresses required for changing the flavors of a dedicated load balancer or enabling **IP as a Backend**, specify **loadbalancer_id** and **l7_flavor_id**, or specify **loadbalancer_id** and set **ip_target_enable** to **true**. You can specify **l7_flavor_id** and set **ip_target_enable** to **true** to calculate the number of IP addresses required for multiple changes.
- To calculate the number of IP addresses required for upgrading a shared load balancer, specify **loadbalancer_id** and **scene**, and do not specify other parameters.
- To calculate the number of IP addresses required for enabling **nat64_enable**, specify **nat64_enable** and **loadbalancer_id**, and do not specify other parameters.

Note:

- The number of reserved IP addresses in the query result is greater than that of the actually used IP addresses.
- The number of reserved IP addresses does not include those already assigned or in use.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v3/{project_id}/elb/preoccupy-ip-num

Table 5-29 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Definition: Specifies the project ID. For details about how to obtain a project ID, see Obtaining a Project ID . Constraints: N/A Range: The value can contain a maximum of 32 characters, including digits and lowercase letters. Default value: N/A

Table 5-30 Query Parameters

Parameter	Mandatory	Type	Description
l7_flavor_id	No	String	Definition: Specifies the ID of the load balancer flavor at Layer 7. If this parameter is passed, the number of reserved IP addresses required for creating a dedicated load balancer with a Layer 7 flavor or for changing the Layer 7 flavor of a dedicated load balancer will be calculated. Constraints: This parameter can only be used for creating a dedicated load balancer with a Layer 7 flavor or changing the Layer 7 flavor of a dedicated load balancer Range: N/A Default value: N/A

Parameter	Mandatory	Type	Description
ip_target_enable	No	Boolean	Definition: Whether to enable IP as a Backend. Constraints: This parameter can only be used for creating a dedicated load balancer with IP as a Backend enabled or for enabling IP as a Backend for an existing dedicated load balancer. Range: • true: The number of reserved IP addresses required for creating a dedicated load balancer with IP as a Backend enabled or for enabling IP as a Backend for an existing dedicated load balancer will be calculated. • false: The number of reserved IP addresses required for creating a dedicated load balancer with IP as a Backend disabled will be calculated. • If this parameter is not passed, IP as a Backend is disabled. Default value: false
ip_version	No	Integer	Definition: Specifies the IP address version of the load balancer. The value can be 4 or 6. Constraints: This parameter can be used for creating a load balancer. Range: • 4: The number of reserved IPv4 addresses required for creating a load balancer will be calculated. • 6: The number of reserved IPv6 addresses required for creating a load balancer will be calculated. Default value: N/A

Parameter	Mandatory	Type	Description
loadbalancer_id	No	String	Definition: Specifies the load balancer ID. The number of reserved IP addresses required for changing the flavors of a load balancer or for adding the first Layer 7 listener to a load balancer will be calculated. Constraints: This parameter can be used for changing the flavors of a load balancer, enabling IP as a Backend for an existing load balancer, enabling or disabling nat64_enable, or adding the first Layer 7 listener to a load balancer. Range: N/A Default value: N/A
availability_zone_id	No	Array of strings	Definition: Calculates the number of reserved IP addresses required for creating a load balancer in the AZs specified by availability_zone_id. Constraints: • This parameter can only be used for creating a load balancer. • This parameter is invalid if loadbalancer_id is specified. Range: N/A Default value: N/A

Parameter	Mandatory	Type	Description
scene	No	String	Definition: Calculates the number of IP addresses required for upgrading a shared load balancer to a dedicated load balancer. Constraints: • This parameter can only be used for upgrading a shared load balancer to a dedicated load balancer. • Both this parameter and loadbalancer_id must be specified. Range: UPGRADE (upgrading a shared load balancer to a dedicated load balancer) Default value: N/A
nat64_enable	No	Boolean	Definition: Specifies whether to enable nat64_enable. If this parameter is specified, the system will calculate the number of reserved IP addresses required for creating a load balancer whose listeners have nat64_enable enabled or disabled, or for enabling or disabling nat64_enable for the listeners of a specific load balancer. Constraints: • This parameter can only be used for calculating the number of reserved IP addresses required for enabling nat64_enable for the listeners of a load balancer. Range: • true: Enable nat64_enable. • false: Disable nat64_enable. Default value: false

Request Parameters

Table 5-31 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Definition: Specifies the token used for IAM authentication. Constraints: N/A Range: N/A Default value: N/A

Response Parameters

Status code: 200

Table 5-32 Response body parameters

Parameter	Type	Description
preoccupy_ip	PreoccupyIp object	Definition: Specifies reserved IP address.
request_id	String	Definition: Specifies the request ID. Range: The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-).

Table 5-33 PreoccupyIp

Parameter	Type	Description
total	Integer	Definition: Specifies the number of preoccupied IP addresses. Range: an integer no less than 0

Example Requests

- Querying the number of reserved IP addresses required for changing the Layer 7 flavor of a dedicated load balancer

```
GET https://{ELB_Endpoint}/v3/060576782980d5762f9ec014dd2f1148/elb/preoccupy-ip-num?loadbalancer_id=aff4fc31-d635-4f59-a862-edadf32e407d&l7_flavor_id=0051bc4c-a562-4b7c-953b-a250b51d992b
```

```
{
  "preoccupy_ip" : {
    "total" : 6
  },
}
```

- ```
"request_id" : "8844e9a0-6a2d-44b7-aad9-15a7f75e4059"
}
```
- Querying the number of reserved IP addresses required for creating a dedicated load balancer that is deployed in two AZs and has **IP as a Backend** enabled  
  
GET https://{ELB\_Endpoint} /v3/060576782980d5762f9ec014dd2f1148/elb/preoccupy-ip-num?  
l7\_flavor\_id=8278944d-  
f92c-4393-82b2-6fb9cc1d7e53&availability\_zone\_id=az1&availability\_zone\_id=az2&ip\_target\_enable=true  
  
{  
 "preoccupy\_ip" : {  
 "total" : 20  
 },  
 "request\_id" : "63388ec8-fa3c-4c99-b9c8-d2c83b2a9a68"  
}
  - Querying the number of reserved IP addresses required for adding the first HTTP or HTTPS listener to a dedicated load balancer  
  
GET https://{ELB\_Endpoint} /v3/060576782980d5762f9ec014dd2f1148/elb/preoccupy-ip-num?  
loadbalancer\_id=aff4fc31-d635-4f59-a862-edadf32e407d  
  
{  
 "preoccupy\_ip" : {  
 "total" : 2  
 },  
 "request\_id" : "febfce48-318d-45ba-a9d9-855462123f3b"  
}

## Example Responses

**Status code: 200**

Successful request.

```
{
 "preoccupy_ip" : {
 "total" : 20
 },
 "request_id" : "63388ec8-fa3c-4c99-b9c8-d2c83b2a9a68"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

- Querying the number of reserved IP addresses required for changing the Layer 7 flavor of a dedicated load balancer

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CountPreoccupyIpNumSolution {
```

```
public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 CountPreoccupyIpNumRequest request = new CountPreoccupyIpNumRequest();
 try {
 CountPreoccupyIpNumResponse response = client.countPreoccupyIpNum(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

- Querying the number of reserved IP addresses required for creating a dedicated load balancer that is deployed in two AZs and has **IP as a Backend** enabled

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CountPreoccupyIpNumSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
```

```
.withAk(ak)
.withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
CountPreoccupypIpNumRequest request = new CountPreoccupypIpNumRequest();
try {
 CountPreoccupypIpNumResponse response = client.countPreoccupypIpNum(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

- Querying the number of reserved IP addresses required for adding the first HTTP or HTTPS listener to a dedicated load balancer

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CountPreoccupypIpNumSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 CountPreoccupypIpNumRequest request = new CountPreoccupypIpNumRequest();
 try {
 CountPreoccupypIpNumResponse response = client.countPreoccupypIpNum(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 }
 }
}
```

```
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

## Python

- Querying the number of reserved IP addresses required for changing the Layer 7 flavor of a dedicated load balancer

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CountPreoccupyIpNumRequest()
 response = client.count_preoccupy_ip_num(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

- Querying the number of reserved IP addresses required for creating a dedicated load balancer that is deployed in two AZs and has **IP as a Backend** enabled

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
```

```
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

try:
 request = CountPreoccupyIpNumRequest()
 response = client.count_preoccupy_ip_num(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

- Querying the number of reserved IP addresses required for adding the first HTTP or HTTPS listener to a dedicated load balancer

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CountPreoccupyIpNumRequest()
 response = client.count_preoccupy_ip_num(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

- Querying the number of reserved IP addresses required for changing the Layer 7 flavor of a dedicated load balancer

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
```

```
elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
"github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.CountPreoccupyIpNumRequest{}
 response, err := client.CountPreoccupyIpNum(request)
 if err == nil {
 fmt.Printf("%v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

- Querying the number of reserved IP addresses required for creating a dedicated load balancer that is deployed in two AZs and has **IP as a Backend** enabled

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
```



```
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build()

 request := &model.CountPreoccupyIpNumRequest{}
 response, err := client.CountPreoccupyIpNum(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

- Querying the number of reserved IP addresses required for adding the first HTTP or HTTPS listener to a dedicated load balancer

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build()

 request := &model.CountPreoccupyIpNumRequest{}
 response, err := client.CountPreoccupyIpNum(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

# 5.6 Load Balancer

## 5.6.1 Creating a Load Balancer

### Function

This API is used to create a dedicated load balancer.

When you create a load balancer, note the following:

- Specify **vip\_subnet\_cidr\_id** if you want to bind a private IPv4 address to the load balancer.
- Specify **publicip** and either **vpc\_id** or **vip\_subnet\_cidr\_id** if you want to bind a new IPv4 EIP to the load balancer.
- Specify **publicip\_ids** and either **vpc\_id** or **vip\_subnet\_cidr\_id** if you want to bind an existing IPv4 EIP to the load balancer.
- Specify **ipv6\_vip\_virsubnet\_id** if you want to bind a private IPv6 address to the load balancer.
- Specify both **ipv6\_vip\_virsubnet\_id** and **ipv6\_bandwidth** if you want to bind a public IPv6 address to the load balancer.
- Specify **l4\_flavor\_id** if you want to create a network load balancer and **l7\_flavor\_id** to create an application load balancer. Specify both **l4\_flavor\_id** and **l7\_flavor\_id** if you want to create a load balancer that can work at both Layer 4 and Layer 7.
- If **prepaid\_options** is not specified, pay-per-use load balancers will be created, which are billed by fixed specifications or elastic specifications you have selected for **l4\_flavor\_id** and **l7\_flavor\_id** when creating the load balancer.
- If you want to create a gateway load balancer, note the following:
  - Set **loadbalancer\_type** to **gateway** and do not specify **vip\_address** and **ipv6\_vip\_address**.
- Specify either **vip\_subnet\_cidr\_id** or **ipv6\_subnet\_cidr\_id**, or both. If they are both specified, they must be the same subnet.
- You cannot bind an EIP to gateway load balancers.
- Specify **gw\_flavor\_id** if you need a given flavor.

## Constraints

There are some constraints when you create a load balancer:

- **vpc\_id**, **vip\_subnet\_cidr\_id**, and **ipv6\_vip\_virsubnet\_id** cannot be left blank at the same time.
- **ip\_target\_enable** specifies whether to enable **IP as a Backend**. If you set it to **true**, you can associate servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using server IP addresses. If you set it to **false**, the load balancer and the backend servers must be in the same VPC.
- **admin\_state\_up** must be **true**.
- **provider** must be set to **vlb**.
- **elb\_virsubnet\_ids** indicates the subnets that support IPv4/IPv6 dual stack or only IPv4. If only IPv4 subnets are supported, **ipv6\_vip\_virsubnet\_id** must be left blank.
- You can unbind the EIP only on the ELB console. Locate the load balancer in the load balancer list and click **More > Unbind EIP** in the **Operation** column.
- **publicip\_ids** and **publicip** cannot be specified at the same time. Set either **publicip\_ids** to bind an existing EIP to the load balancer, or **publicip** to bind a new EIP to the load balancer, or neither of them.
- If you want to add the load balancer to an existing shared bandwidth, you must specify the ID of the shared bandwidth. If you want the load balancer to use a new dedicated bandwidth, **charge\_mode**, **share\_type**, and **size** are required.

## Calling Method

For details, see [Calling APIs](#).

## URI

POST /v3/{project\_id}/elb/loadbalancers

**Table 5-34** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-35** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | No        | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-36** Request body parameters

| Parameter    | Mandatory | Type                                            | Description                                                                                          |
|--------------|-----------|-------------------------------------------------|------------------------------------------------------------------------------------------------------|
| loadbalancer | Yes       | <a href="#">CreateLoadBalancerOption</a> object | <b>Definition:</b> Specifies the parameters for creating a load balancer.<br><b>Constraints:</b> N/A |

**Table 5-37** CreateLoadBalancerOption

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | No        | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A<br><b>NOTE</b><br>This parameter is invalid. The project ID in the URL is used. |
| name       | No        | String | <b>Definition:</b> Specifies the load balancer name.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, including letters and more. It can be left blank.<br><b>Default value:</b> N/A                                                                                                                                                 |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description | No        | String | <b>Definition:</b> Provides supplementary information about the load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, including letters and more. It can be left blank.<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| vip_address | No        | String | <b>Definition:</b> Specifies the private IPv4 address of the load balancer. The IP address must be from the IPv4 subnet where the load balancer resides and should not be used by other services.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• <b>vip_subnet_cidr_id</b> is also required if <b>vip_address</b> is specified.</li><li>• If only <b>vip_subnet_cidr_id</b> is specified, the system will automatically assign a private IPv4 address to the load balancer.</li><li>• If neither <b>vip_address</b> nor <b>vip_subnet_cidr_id</b> is specified, no private IPv4 address will be assigned, and the value of <b>vip_address</b> will be <b>null</b>.</li><li>• <b>vip_address</b> cannot be specified for gateway load balancers.</li></ul> <b>Range:</b> The IP address must be in [0-255].[0-255].[0-255].[0-255] format, for example, 192.168.1.1.<br><b>Default value:</b> N/A |

| Parameter                       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>vip_subnet_cidr_id</code> | No        | String | <p><b>Definition:</b> Specifies the ID of the IPv4 subnet where the load balancer is located. This subnet is also called the frontend subnet.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is mandatory if you need to create a load balancer with a private IPv4 address. You can query parameter <b>neutron_subnet_id</b> in the response by calling the VPC API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets).</li><li>• <b>vpc_id</b>, <b>vip_subnet_cidr_id</b>, and <b>ipv6_vip_virsubnet_id</b> cannot be left blank at the same time. The subnet specified by <b>vip_subnet_cidr_id</b> and the subnet specified by <b>ipv6_vip_virsubnet_id</b> must be in the VPC specified by <b>vpc_id</b>.</li><li>• The subnet specified by <b>vip_subnet_cidr_id</b> must be in the VPC specified by <b>vpc_id</b> if both <b>vpc_id</b> and <b>vip_subnet_cidr_id</b> are specified.</li><li>• <b>vip_subnet_cidr_id</b> and <b>ipv6_vip_virsubnet_id</b> cannot be left blank at the same time when you create gateway load balancers. Their values must be the IPv4 subnet ID and IPv6 network ID of the same subnet.</li></ul> <p><b>Range:</b> The ID must be in UUID format and can contain up to 36 characters.</p> <p><b>Default value:</b> N/A</p> |

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipv6_vip_virsubnet_id | No        | String | <p><b>Definition:</b> Specifies the ID of the IPv6 subnet where the load balancer is located. This subnet is also called the frontend subnet.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is mandatory if you need to create a load balancer with a private IPv6 address. You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets).</li><li>• <b>vpc_id</b>, <b>vip_subnet_cidr_id</b>, and <b>ipv6_vip_virsubnet_id</b> cannot be left blank at the same time. The subnet specified by <b>vip_subnet_cidr_id</b> and the subnet specified by <b>ipv6_vip_virsubnet_id</b> must be in the VPC specified by <b>vpc_id</b>.</li><li>• IPv6 must have been enabled for the subnet where the load balancer resides.</li><li>• <b>vip_subnet_cidr_id</b> and <b>ipv6_vip_virsubnet_id</b> cannot be left blank at the same time when you create gateway load balancers. Their values must be the IPv4 subnet ID and IPv6 network ID of the same subnet.</li></ul> <p><b>Range:</b> The ID must be in UUID format and can contain up to 36 characters.</p> <p><b>Default value:</b> N/A</p> |

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| provider     | No        | String | <b>Definition:</b> Specifies the provider of the load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can only be <b>vlb</b> and does not need to be specified.<br><b>Default value:</b> <b>vlb</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| l4_flavor_id | No        | String | <b>Definition:</b> Specifies the ID of a flavor at Layer 4.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• You can query parameter <b>id</b> in the response by calling the API (GET https://{ELB_Endpoint}/v3/{project_id}/elb/flavors?type=L4).</li><li>• If neither <b>l4_flavor_id</b> nor <b>l7_flavor_id</b> is specified, the default flavor is used. The default flavor varies by site.</li><li>• If the flavor type is <b>L4</b>, the load balancer uses the fixed flavors and will be billed by the flavor you select.</li><li>• If the flavor type is <b>L4_elastic_max</b>, the load balancer uses the elastic flavors and will be billed by how many LCUs you use.</li><li>• This parameter is not supported by gateway load balancers.</li></ul> <b>Range:</b> The ID must be in UUID format and can contain up to 36 characters.<br><b>Default value:</b> N/A |



| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|--------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| l7_flavor_id | No        | String  | <p><b>Definition:</b> Specifies the ID of a flavor at Layer 7.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• You can query parameter <b>id</b> in the response by calling the API (GET https://{ELB_Endpoint}/v3/{project_id}/elb/flavors?type=L7).</li><li>• If neither <b>l4_flavor_id</b> nor <b>l7_flavor_id</b> is specified, the default flavor is used. The default flavor varies by site.</li><li>• If the flavor type is <b>L7</b>, the load balancer uses the fixed flavors and will be billed by the flavor you select.</li><li>• If the flavor type is <b>L7_elastic_max</b>, the load balancer uses the elastic flavors and will be billed by how many LCUs you use.</li><li>• This parameter is not supported by gateway load balancers.</li></ul> <p><b>Range:</b> The ID must be in UUID format and can contain up to 36 characters.</p> <p><b>Default value:</b> N/A</p> |
| guaranteed   | No        | Boolean | <p><b>Definition:</b> Specifies whether to create a shared or dedicated load balancer.</p> <p>Currently, the value can only be <b>true</b>. If the value is set to <b>false</b>, 400 Bad Request will be returned.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>true:</b> Dedicated load balancers will be created.</li><li>• <b>false:</b> Shared load balancers will be created.</li></ul> <p><b>Default value:</b> <b>true</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Parameter              | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vpc_id                 | No        | String           | <p><b>Definition:</b> Specifies the ID of the VPC where the load balancer is located.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>You can query parameter <b>id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/vpcs).</li><li><b>vpc_id</b>, <b>vip_subnet_cidr_id</b>, and <b>ipv6_vip_virsubnet_id</b> cannot be left blank at the same time. The subnet specified by <b>vip_subnet_cidr_id</b> and the subnet specified by <b>ipv6_vip_virsubnet_id</b> must be in the VPC specified by <b>vpc_id</b>.</li></ul> <p><b>Range:</b> The ID must be in UUID format and can contain up to 36 characters.</p> <p><b>Default value:</b> N/A</p> |
| availability_zone_list | Yes       | Array of strings | <p><b>Definition:</b> Specifies the list of AZs where the load balancers are created.</p> <p>You can query the AZs by calling the API (GET https://{ELB_Endpoint}/v3/{project_id}/elb/availability-zones). Select one or more AZs in the same set.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> <p><b>NOTE</b></p> <p>If disaster recovery is required, you are advised to select multiple AZs.</p>                                                                                                                                                                                                                                                       |

| Parameter             | Mandatory | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-----------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | String                               | <b>Definition:</b> Specifies the ID of the enterprise project. If no enterprise project ID is specified during resource creation, 0 is returned, indicating that the resource belongs to the default enterprise project.<br><b>Constraints:</b> The enterprise project ID cannot be "", 0, or an enterprise project ID that does not exist.<br><b>Range:</b> N/A<br><b>Default value:</b> 0 |
| tags                  | No        | Array of <a href="#">Tag</a> objects | <b>Definition:</b> Specifies the tags added to the load balancer.<br>Example: "tags": [{"key": "my_tag", "value": "my_tag_value"}]<br><b>Constraints:</b> N/A                                                                                                                                                                                                                               |
| admin_state_up        | No        | Boolean                              | <b>Definition:</b> Specifies whether the load balancer is enabled.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> enabled</li><li>• <b>false:</b> disabled</li></ul> <b>Default value:</b> true                                                                                                                                           |
| billing_info          | No        | String                               | <b>Definition:</b> Provides resource billing information.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• If the value is left blank, the resource is billed on a pay-per-use basis.</li></ul> <b>Default value:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                        |

| Parameter      | Mandatory | Type                                                    | Description                                                                                                                                                                                                                                                                                                                                                           |
|----------------|-----------|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipv6_bandwidth | No        | <a href="#">BandwidthRef</a> object                     | <b>Definition:</b> Specifies the ID of the bandwidth.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is available only when you create or update a load balancer with a public address.</li><li>• If you bind a new EIP to the load balancer and specify a shared bandwidth, this EIP will be added to the shared bandwidth.</li></ul> |
| publicip_ids   | No        | Array of strings                                        | <b>Definition:</b> Specifies the IDs of the EIPs bound to the load balancer.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• Only the first EIP in the array will be bound.</li><li>• This parameter is not supported by gateway load balancers.</li></ul>                                                                                             |
| publicip       | No        | <a href="#">CreateLoadBalancerPublicIpOption</a> object | <b>Definition:</b> Specifies the request parameters for binding a new EIP to the load balancer.<br><b>Constraints:</b> N/A                                                                                                                                                                                                                                            |

| Parameter         | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| elb_virsubnet_ids | No        | Array of strings | <p><b>Definition:</b> (OpenStack Neutron API) Specifies the network IDs of backend subnets where the load balancers work. A load balancer uses IP addresses in the backend subnet to communicate with backend servers (such as in health check and FullNAT scenarios).</p> <p>You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets?vpc_id=xxxx).</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The backend subnet must be in the VPC where the load balancer works.</li><li>• You need to specify a backend subnet for the load balancer and add rules to the security group associated with the backend server to allow access from the backend subnet.</li><li>• If there is more than one subnet, the first subnet in the list will be used to assign IP addresses.</li><li>• If this parameter is not specified, the network IDs will be used based on the following rules:<ul style="list-style-type: none"><li>– If IPv6 is enabled for a load balancer, the network IDs of subnets specified in <b>ipv6_vip_virsubnet_id</b> will be used.</li><li>– If IPv6 is not enabled for a load balancer, the network IDs of subnets specified in</li></ul></li></ul> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-----------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p><b>vip_subnet_cidr_id</b> will be used.</p> <ul style="list-style-type: none"><li>– If a load balancer only works on the public network, any subnet in the VPC where the load balancer is deployed will be used. The subnet with the most available IP addresses is preferred.</li><li>• A load balancer uses IP addresses in the backend subnet to communicate with backend servers (such as in health check, and FullNAT scenarios). To prevent traffic from being blocked by the security groups associated with backend servers, add security group rules to allow access from the backend subnet of the load balancer to backend servers.</li><li>• In the elastic scaling scenario, the reserved IP addresses may change. It is recommended that you should add security group rules to allow access from the backend subnet of the load balancer instead of only allowing certain IP addresses.</li><li>• You are advised to use a dedicated subnet with sufficient IP addresses for easier O&amp;M.</li></ul> <p><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p> |

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_target_enable | No        | Boolean | <p><b>Definition:</b> Specifies whether to add backend servers that are not in the load balancer's VPC.</p> <p>If you set it to <b>true</b>, you can associate servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using server IP addresses.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This function cannot be disabled once it is enabled.</li><li>• If you want to enable <b>IP as a Backend</b> for a load balancer in a shared VPC, ensure that a VPC peering connection has been created to connect the VPCs. Otherwise, the communication will fail.</li><li>• This function is supported only by dedicated load balancers.</li><li>• This function is not supported by gateway load balancers.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> <p><b>Default value:</b> false</p> |

| Parameter                  | Mandatory | Type                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------|-----------|----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| deletion_protection_enable | No        | Boolean                    | <p><b>Definition:</b> Specifies whether to enable deletion protection for the load balancer.</p> <p><b>Constraints:</b> Before deleting a load balancer, you need to disable deletion protection first.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>false:</b> This option will not be enabled.</li> <li>• <b>true:</b> This option will be enabled.</li> </ul> <p><b>Default value:</b> false</p> |
| prepaid_options            | No        | PrepaidCreateOption object | <p><b>Definition:</b> Specifies the prepaid billing configuration for creating a load balancer. If this structure is passed, a prepaid load balancer is created.</p> <p><b>Constraints:</b> N/A</p> <p>This parameter is unsupported. Please do not use it.</p>                                                                                                                                                             |



| Parameter          | Mandatory | Type                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------|-----------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| autoscaling        | No        | CreateLoadbalancerAutoscalingOption object | <p><b>Definition:</b> Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer flavors can be automatically adjusted based on incoming traffic.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is only available for whitelisted users.</li><li>• If elastic scaling is enabled, <b>l4_flavor_id</b> indicates the ID of the maximum elastic flavor at Layer 4. <b>l7_flavor_id</b> indicates the ID of the maximum elastic flavor at Layer 7.</li></ul> <p><b>NOTE</b><br/>This parameter has been deprecated, but is retained for compatibility purposes. Using this parameter is not recommended. If this parameter is specified, the load balancer with minimum flavors will be created and you will be billed for the minimum flavors.</p> |
| waf_failure_action | No        | String                                     | <p><b>Definition:</b> Specifies traffic distributing policies when the WAF is faulty.</p> <p><b>Constraints:</b> This parameter takes effect only when WAF is enabled for the load balancer.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>discard:</b> Traffic will not be distributed.</li><li>• <b>forward:</b> Traffic will be distributed to the backend servers.</li></ul> <p><b>Default value:</b> forward</p>                                                                                                                                                                                                                                                                                                                                                                                 |

| Parameter         | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_status | No        | String | <p><b>Definition:</b> Specifies the protection status. This parameter is used to prevent resources from being modified by accident on the console. If this parameter is set to <b>consoleProtection</b>, you cannot modify resource settings on the console.</p> <p><b>Constraints:</b> You can call APIs to modify resource attributes, such as resource tags. This improves user experience on the console, for example, preventing accidental modification.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul> <p><b>Default value:</b> nonProtection</p> |
| protection_reason | No        | String | <p><b>Definition:</b> Specifies why modification protection is enabled.</p> <p><b>Constraints:</b> This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b>.</p> <p><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (&lt;&gt;).</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                               |

| Parameter        | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| charge_mode      | No        | String | <p><b>Definition:</b> Specifies the charge mode of the load balancer.</p> <p><b>Constraints:</b> You are not recommended to specify this parameter. The charge mode will be selected based on the value you have specified for <b>l4_flavor_id</b> or <b>l7_flavor_id</b>.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>flavor:</b> billed by the fixed flavor you select.</li><li>• <b>lcu:</b> billed by how many LCUs you have used.</li></ul> <p><b>Default value:</b></p> <ul style="list-style-type: none"><li>• If this parameter is not specified during the creation of a shared load balancer, <b>flavor</b> is selected by default.</li><li>• If you create a dedicated load balancer, this parameter is ignored. The charge mode will be selected based on the value you have specified for <b>l4_flavor_id</b> or <b>l7_flavor_id</b>.</li></ul> |
| ipv6_vip_address | No        | String | <p><b>Definition:</b> Specifies the IPv6 address used by the load balancer.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The IPv6 address must be one in the subnet defined by <b>ipv6_vip_virsubnet_id</b>.</li><li>• Subnets defined by <b>elb_virsubnet_ids</b> must support IPv4/IPv6 dual stack.</li><li>• <b>ipv6_vip_address</b> is not supported by gateway load balancers.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                    |

**Table 5-38** Tag

| Parameter | Mandatory | Type   | Description                                                      |
|-----------|-----------|--------|------------------------------------------------------------------|
| key       | No        | String | <b>Definition:</b> Specifies the tag key.<br><b>Range:</b> N/A   |
| value     | No        | String | <b>Definition:</b> Specifies the tag value.<br><b>Range:</b> N/A |

**Table 5-39** BandwidthRef

| Parameter | Mandatory | Type   | Description                                                  |
|-----------|-----------|--------|--------------------------------------------------------------|
| id        | Yes       | String | <b>Definition:</b> Specifies the ID of the shared bandwidth. |

**Table 5-40** CreateLoadBalancerPublicIpOption

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                     |
|--------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_version   | No        | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> <b>Default value:</b> 4                        |
| network_type | Yes       | String  | <b>Definition:</b> Specifies the EIP type. The default value is <b>5_bgp</b> . For more information, see the API for assigning an EIP in the <i>Virtual Private Cloud API Reference</i> .<br><b>Range:</b> 5_bgp<br><b>Default value:</b> 5_bgp |

| Parameter    | Mandatory | Type                                     | Description                                                                                                                                                                                                                                                                                                             |
|--------------|-----------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| billing_info | No        | String                                   | <b>Definition:</b> Provides billing information about the EIP.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>If the value is left blank, the resource is billed on a pay-per-use basis.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A<br>This parameter is unsupported. Please do not use it. |
| description  | No        | String                                   | <b>Definition:</b> Provides supplementary information about the EIP.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                       |
| bandwidth    | Yes       | CreateLoadBalancerBandwidthOption object | <b>Definition:</b> Provides supplementary information about the bandwidth.<br><b>Constraints:</b> N/A                                                                                                                                                                                                                   |

**Table 5-41** CreateLoadBalancerBandwidthOption

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name      | No        | String | <b>Definition:</b> Specifies the bandwidth name.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>This parameter is mandatory if <b>share_type</b> is set to <b>PER</b>.</li><li>This parameter will be ignored if the bandwidth reference has a specific ID.</li></ul> <b>Range:</b> The value can contain 1 to 64 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).<br><b>Default value:</b> N/A |

| Parameter   | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| size        | No        | Integer | <p><b>Definition:</b> Specifies the bandwidth size.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is mandatory if <b>id</b> is set to <b>null</b>.</li><li>• The minimum increment for bandwidth adjustment varies by bandwidth range. The details are as follows:<ul style="list-style-type: none"><li>– The minimum increment is 1 Mbit/s if the bandwidth range is from 0 Mbit/s to 300 Mbit/s.</li><li>– The minimum increment is 50 Mbit/s if the bandwidth range is from 301 Mbit/s to 1,000 Mbit/s.</li><li>– The minimum increment is 500 Mbit/s if the bandwidth is greater than 1,000 Mbit/s.</li></ul></li></ul> <p><b>Range:</b> The default value ranges from 1 Mbit/s to 2,000 Mbit/s, which may vary by region and can be viewed on the management console.</p> <p><b>Default value:</b> N/A</p> |
| charge_mode | No        | String  | <p><b>Definition:</b> Specifies how the bandwidth used by the EIP is billed.</p> <p><b>Constraints:</b> This parameter is mandatory if <b>id</b> is set to <b>null</b>.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>bandwidth:</b> billed by bandwidth</li><li>• <b>traffic:</b> billed by traffic</li></ul> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| share_type   | No        | String | <b>Definition:</b> Specifies the bandwidth type.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is mandatory when <b>id</b> is set to <b>null</b>. It will be ignored if the value of <b>id</b> is not <b>null</b>.</li><li>• The bandwidth ID must be specified if the bandwidth type is set to <b>WHOLE</b>.</li><li>• The bandwidth type cannot be <b>WHOLE</b> for IPv6 EIPs.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>PER</b>: dedicated bandwidths</li><li>• <b>WHOLE</b>: shared bandwidths</li></ul> <b>Default value:</b> N/A |
| billing_info | No        | String | <b>Definition:</b> Provides resource billing information.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                                                                                                                                                                                                  |
| id           | No        | String | <b>Definition:</b> Specifies the ID of the shared bandwidth. An existing shared bandwidth is used.<br><b>Constraints:</b> The ID must be an existing shared bandwidth ID. There is no need to specify this parameter if the billing mode is yearly/monthly. This parameter will be ignored if it is left blank.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                               |

**Table 5-42** PrepaidCreateOption

| Parameter   | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                               |
|-------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| period_type | Yes       | String  | <b>Definition:</b> Specifies the subscription period type.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>month:</b> monthly subscription</li><li>• <b>year:</b> yearly subscription</li></ul> <b>Default value:</b> N/A                                                                                          |
| period_num  | No        | Integer | <b>Definition:</b> Specifies the number of subscription periods.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• The value ranges from 1 to 9, if <b>period_type</b> is set to <b>month</b>.</li><li>• The value ranges from 1 to 3, if <b>period_type</b> is set to <b>year</b>.</li></ul> <b>Default value:</b> N/A |
| auto_renew  | No        | Boolean | <b>Definition:</b> Specifies whether to enable automatic renewal.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Enable automatic renewal.</li><li>• <b>false</b> (default): Disable automatic renewal.</li></ul> <b>Default value:</b> N/A                                                             |



| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| auto_pay  | No        | Boolean | <b>Definition:</b> Specifies whether an order is automatically paid using your account balance without manual operations.<br><b>Constraints:</b> If you use the automatic payment mode, only your account balance can be used. If you want to use a voucher, do not use the automatic payment mode, and select the voucher for the payment in the Billing Center.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The order will be automatically paid.</li><li>• <b>false:</b> The order will not be automatically paid.</li></ul> <b>Default value:</b> N/A |

**Table 5-43** CreateLoadbalancerAutoscalingOption

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                |
|------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable           | Yes       | Boolean | <b>Definition:</b> Specifies whether to enable elastic scaling for the load balancer.<br><b>Constraints:</b> This parameter is not supported by gateway load balancers.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> |
| min_l7_flavor_id | No        | String  | <b>Definition:</b> Specifies the ID of the minimum elastic flavor at Layer 7.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                 |

## Response Parameters

**Status code:** 201

**Table 5-44** Response body parameters

| Parameter    | Type                       | Description                                                                                                                                                                          |
|--------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer | <b>LoadBalancer</b> object | <b>Definition:</b> Specifies the load balancer.                                                                                                                                      |
| request_id   | String                     | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-45** LoadBalancer

| Parameter           | Type                                | Description                                                                                                                                                                                                   |
|---------------------|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                  | String                              | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A                                                                                                                                       |
| description         | String                              | <b>Definition:</b> Provides supplementary information about the load balancer.<br><b>Range:</b> N/A                                                                                                           |
| provisioning_status | String                              | <b>Definition:</b> Specifies the provisioning status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ACTIVE:</b> in use</li><li>• <b>PENDING_DELETE:</b> deleting</li></ul> |
| admin_state_up      | Boolean                             | <b>Definition:</b> Specifies whether the load balancer is enabled.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> enabled</li><li>• <b>false:</b> disabled</li></ul>                   |
| provider            | String                              | <b>Definition:</b> Specifies the provider of the load balancer. The value is fixed to <b>vlb</b> .<br><b>Range:</b> N/A                                                                                       |
| pools               | Array of <b>PoolRef</b> objects     | <b>Definition:</b> Lists the IDs of backend server groups associated with the load balancer.                                                                                                                  |
| listeners           | Array of <b>ListenerRef</b> objects | <b>Definition:</b> Lists the IDs of listeners associated with the load balancer.                                                                                                                              |

| Parameter          | Type                                 | Description                                                                                                                                                                                                                                  |
|--------------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status   | String                               | <b>Definition:</b> Specifies the operating status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The load balancer is online.</li><li>• <b>FROZEN:</b> The load balancer is frozen.</li></ul> |
| name               | String                               | <b>Definition:</b> Specifies the load balancer name.<br><b>Range:</b> N/A                                                                                                                                                                    |
| project_id         | String                               | <b>Definition:</b> Specifies the ID of the project where the load balancer is used.<br><b>Range:</b> N/A                                                                                                                                     |
| vip_subnet_cidr_id | String                               | <b>Definition:</b> Specifies the ID of the IPv4 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br><b>Range:</b> N/A                                                                              |
| vip_address        | String                               | <b>Definition:</b> Specifies the private IPv4 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                             |
| vip_port_id        | String                               | <b>Definition:</b> Specifies the ID of the port bound to the private IPv4 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                 |
| tags               | Array of <a href="#">Tag</a> objects | <b>Definition:</b> Specifies the tags added to the load balancer.                                                                                                                                                                            |
| created_at         | String                               | <b>Definition:</b> Specifies the time when the load balancer was created.<br><b>Range:</b><br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                           |
| updated_at         | String                               | <b>Definition:</b> Specifies the time when the load balancer was updated.<br><b>Range:</b><br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                           |

| Parameter              | Type                                     | Description                                                                                                                                                                                                                                                                               |
|------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| guaranteed             | Boolean                                  | <b>Definition:</b> Specifies whether the load balancer is a dedicated load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>false:</b> The load balancer is a shared load balancer.</li><li>• <b>true:</b> The load balancer is a dedicated load balancer.</li></ul> |
| vpc_id                 | String                                   | <b>Definition:</b> Specifies the ID of the VPC where the load balancer is located.<br><b>Range:</b> N/A                                                                                                                                                                                   |
| eips                   | Array of <a href="#">EipInfo</a> objects | <b>Definition:</b> Specifies the EIP bound to the load balancer.<br><b>NOTE</b><br>This parameter has the same meaning as <b>publicips</b> .                                                                                                                                              |
| ipv6_vip_address       | String                                   | <b>Definition:</b> Specifies the IPv6 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                                                  |
| ipv6_vip_virsubnet_id  | String                                   | <b>Definition:</b> Specifies the ID of the IPv6 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br><b>Range:</b> N/A                                                                                                                           |
| ipv6_vip_port_id       | String                                   | <b>Definition:</b> Specifies the ID of the port bound to the IPv6 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                      |
| availability_zone_list | Array of strings                         | <b>Definition:</b> Specifies the list of AZs where the load balancers are created.<br><b>Range:</b> N/A                                                                                                                                                                                   |
| enterprise_project_id  | String                                   | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul>         |

| Parameter          | Type   | Description                                                                                                                                                                                                                                                |
|--------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| billing_info       | String | <b>Definition:</b> Provides resource billing information.<br><b>Range:</b> <ul style="list-style-type: none"><li>If the value is left blank, the resource is billed on a pay-per-use basis.</li></ul> This parameter is unsupported. Please do not use it. |
| l4_flavor_id       | String | <b>Definition:</b> Specifies the ID of a flavor at Layer 4.<br>If the current load balancer is an elastic flavor instance, this parameter defines the maximum elastic flavor at Layer 4.<br><b>Range:</b> N/A                                              |
| l4_scale_flavor_id | String | <b>Definition:</b> Specifies the ID of an elastic flavor at Layer 4.<br><b>Range:</b> N/A<br><b>NOTE</b><br>This parameter has been discarded. Do not use it.                                                                                              |
| l7_flavor_id       | String | <b>Definition:</b> Specifies the ID of a flavor at Layer 7.<br>If the current load balancer is an elastic flavor instance, this parameter defines the maximum elastic flavor at Layer 7.<br><b>Range:</b> N/A                                              |
| l7_scale_flavor_id | String | <b>Definition:</b> Specifies the ID of an elastic flavor at Layer 7.<br><b>Range:</b> N/A<br><b>NOTE</b><br>This parameter has been discarded. Do not use it.                                                                                              |
| gw_flavor_id       | String | <b>Definition:</b> Specifies the flavor ID of the gateway load balancer.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                      |

| Parameter          | Type                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer_type  | String                                         | <b>Definition:</b> Specifies the load balancer type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>gateway:</b> gateway load balancers</li><li>• <b>null:</b> other types of load balancers</li></ul> This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                                                                                       |
| publicips          | Array of <a href="#">PublicIpInfo</a> objects  | <b>Definition:</b> Specifies the EIP bound to the load balancer.<br><b>NOTE</b><br>This parameter has the same meaning as <b>eips</b> .                                                                                                                                                                                                                                                                                                                                                                                                                        |
| global_eips        | Array of <a href="#">GlobalEipInfo</a> objects | <b>Definition:</b> Specifies the global EIP bound to the load balancer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| elb_virsubnet_ids  | Array of strings                               | <b>Definition:</b> Specifies the network IDs of subnets on the downstream plane.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| elb_virsubnet_type | String                                         | <b>Definition:</b> Specifies the type of the subnet on the downstream plane.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ipv4:</b> IPv4 subnets</li><li>• <b>dualstack:</b> subnets that support IPv4/IPv6 dual stack</li></ul>                                                                                                                                                                                                                                                                                                                |
| ip_target_enable   | Boolean                                        | <b>Definition:</b> Specifies whether to add backend servers that are not in the load balancer's VPC.<br>If you set it to <b>true</b> , you can associate servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using server IP addresses.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> |

| Parameter                  | Type                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| frozen_scene               | String                                | <b>Definition:</b> Specifies the scenario where the load balancer is frozen.<br>If there are multiple scenarios, separate them with commas (,).<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ILLEGAL:</b> The load balancer is frozen due to violation of laws and regulations.</li><li>• <b>VERIFY:</b> Your account has not completed real-name authentication.</li><li>• <b>PARTNER:</b> The load balancer is frozen by the partner.</li><li>• <b>ARREAR:</b> The load balancer is frozen due to arrears.</li></ul> |
| deletion_protection_enable | Boolean                               | <b>Definition:</b> Specifies whether to enable deletion protection. This parameter is returned only when the deletion protection is enabled in the current region.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>false:</b> This option will be disabled.</li><li>• <b>true:</b> This option will be enabled.</li></ul>                                                                                                                                                                                                 |
| autoscaling                | <a href="#">AutoscalingRef</a> object | <b>Definition:</b> Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer flavors can be automatically adjusted based on incoming traffic.<br><b>NOTE</b><br>This parameter has been deprecated, but is retained for compatibility purposes. Using this parameter is not recommended. If this parameter is specified, the load balancer with minimum flavors will be created and you will be billed for the minimum flavors.                                                                   |
| public_border_group        | String                                | <b>Definition:</b> Specifies the public border group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>center:</b> public border group of the central site</li><li>• <b>Edge site name:</b> public border group of an edge site</li></ul>                                                                                                                                                                                                                                                                                  |

| Parameter                 | Type                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| charge_mode               | String                                         | <b>Definition:</b> Specifies the charge mode of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>flavor:</b> billed by the fixed flavor you select.</li><li>• <b>lcu:</b> billed by how many LCUs you have used.</li><li>• <b>Null:</b> If it is a shared load balancer, it is free. If it is a dedicated load balancer, it will be billed by the fixed flavor you select.</li></ul> This parameter is unsupported. Please do not use it. |
| service_lb_mode           | String                                         | <b>Definition:</b> Specifies load balancer mode.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>lb:</b> Cross-tenant access is not supported.</li><li>• <b>ep:</b> Cross-tenant access is supported.</li></ul> This parameter is unsupported. Please do not use it.                                                                                                                                                                                        |
| instance_type             | String                                         | <b>Definition:</b> Specifies the internal service to which the load balancer belongs.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                                                                                                      |
| instance_id               | String                                         | <b>Definition:</b> Specifies the ID of the instance with which the load balancer is associated.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                                                                                            |
| proxy_protocol_extensions | Array of <b>ProxyProtocolExtension</b> objects | <b>Definition:</b> Specifies the proxy protocol extension.<br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                                                                                                                                                      |



| Parameter          | Type                         | Description                                                                                                                                                                                                                                                 |
|--------------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| waf_failure_action | String                       | <b>Definition:</b> Specifies traffic distributing policies when the WAF is faulty.<br><b>Range:</b> <b>discard</b> indicates traffic will not be distributed. <b>forward</b> indicates traffic will be distributed to the default backend servers.          |
| protection_status  | String                       | <b>Definition:</b> Specifies the protection status.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul> |
| protection_reason  | String                       | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>).                                                                             |
| log_group_id       | String                       | <b>Definition:</b> Specifies the ID of the log group that is associated with the load balancer.<br><b>Range:</b> N/A                                                                                                                                        |
| log_topic_id       | String                       | <b>Definition:</b> Specifies the ID of the log topic that is associated with the load balancer.<br><b>Range:</b> N/A                                                                                                                                        |
| custom_qos_limit   | <b>CustomQosLimit</b> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors.<br>This parameter is unsupported. Please do not use it.                                                                                                                         |

**Table 5-46** PoolRef

| Parameter | Type   | Description                                                                    |
|-----------|--------|--------------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A |

**Table 5-47** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

**Table 5-48** Tag

| Parameter | Type   | Description                                                      |
|-----------|--------|------------------------------------------------------------------|
| key       | String | <b>Definition:</b> Specifies the tag key.<br><b>Range:</b> N/A   |
| value     | String | <b>Definition:</b> Specifies the tag value.<br><b>Range:</b> N/A |

**Table 5-49** EipInfo

| Parameter   | Type    | Description                                                                                                                                                           |
|-------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| eip_id      | String  | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A                                                                                                         |
| eip_address | String  | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A                                                                                                            |
| ip_version  | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

**Table 5-50** PublicIpInfo

| Parameter        | Type   | Description                                                   |
|------------------|--------|---------------------------------------------------------------|
| publicip_id      | String | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A |
| publicip_address | String | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A    |

| Parameter  | Type    | Description                                                                                                                                                       |
|------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_version | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 address</li><li>• 6: IPv6 address</li></ul> |

**Table 5-51** GlobalEipInfo

| Parameter            | Type    | Description                                                                                                                                                           |
|----------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| global_eip_id        | String  | <b>Definition:</b> Specifies the ID of the global EIP.<br><b>Range:</b> N/A                                                                                           |
| global_eip_addresses | String  | <b>Definition:</b> Specifies the global EIP.<br><b>Range:</b> N/A                                                                                                     |
| ip_version           | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

**Table 5-52** AutoscalingRef

| Parameter        | Type    | Description                                                                                                                                                                                                                                              |
|------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable           | Boolean | <b>Definition:</b> Specifies whether to enable elastic scaling for the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> |
| min_l7_flavor_id | String  | <b>Definition:</b> Specifies the ID of the minimum elastic flavor at Layer 7.<br><b>Range:</b> N/A                                                                                                                                                       |

**Table 5-53** ProxyProtocolExtension

| Parameter        | Type                    | Description                                                                                                                 |
|------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| vip_address      | String                  | <b>Definition:</b> Specifies the IPv4 address.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| ipv6_vip_address | String                  | <b>Definition:</b> Specifies the IPv6 address.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| extension        | <b>Extension</b> object | <b>Definition:</b> Specifies the proxy protocol extension.<br><b>Constraints:</b> N/A                                       |

**Table 5-54** Extension

| Parameter     | Type   | Description                                                                                                                            |
|---------------|--------|----------------------------------------------------------------------------------------------------------------------------------------|
| ep_id         | String | <b>Definition:</b> Specifies the VPC endpoint ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A         |
| ep_service_id | String | <b>Definition:</b> Specifies the VPC endpoint service ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-55** CustomQosLimit

| Parameter | Type                  | Description                                                                            |
|-----------|-----------------------|----------------------------------------------------------------------------------------|
| l4        | <b>L4Limit</b> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors at Layer 4. |
| l7        | <b>L7Limit</b> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors at Layer 7. |

Table 5-56 L4Limit

| Parameter  | Type    | Description                                                                                                |
|------------|---------|------------------------------------------------------------------------------------------------------------|
| connection | Integer | <b>Definition:</b> Specifies the maximum number of concurrent connections at Layer 4.<br><b>Range:</b> N/A |
| cps        | Integer | <b>Definition:</b> Specifies the maximum number of new connections at Layer 4.<br><b>Range:</b> N/A        |

Table 5-57 L7Limit

| Parameter  | Type    | Description                                                                                                |
|------------|---------|------------------------------------------------------------------------------------------------------------|
| connection | Integer | <b>Definition:</b> Specifies the maximum number of concurrent connections at Layer 7.<br><b>Range:</b> N/A |
| cps        | Integer | <b>Definition:</b> Specifies the maximum number of new connections at Layer 7.<br><b>Range:</b> N/A        |

## Example Requests

- Example 1: Creating a load balancer with a private IPv4 address

POST https://{ELB\_Endpoint}/v3/060576798a80d5762fafc01a9b5eedc7/elb/loadbalancers

```
{
 "loadbalancer" : {
 "name" : "loadbalancer",
 "description" : "simple lb",
 "vip_subnet_cidr_id" : "1992ec06-f364-4ae3-b936-6a8cc24633b7",
 "admin_state_up" : true,
 "availability_zone_list" : ["AZ1"]
 }
}
```

- Example 2: Creating a load balancer with an IPv4 EIP

POST https://{ELB\_Endpoint}/v3/060576782980d5762f9ec014dd2f1148/elb/loadbalancers

```
{
 "loadbalancer" : {
 "vip_subnet_cidr_id" : "e6e9271d-aef4-48f0-a93a-ccc7b09032c1",
 "availability_zone_list" : ["AZ1"],
 "admin_state_up" : true,
 "publicip" : {
 "network_type" : "5_bgp",
 "bandwidth" : {
 "size" : 2,
 "share_type" : "PER",
 "charge_mode" : "bandwidth",
 "name" : "bandwidth_test"
 }
 }
 }
}
```

```
 }
 },
 "name": "elb_eip-test"
}
}
```

## Example Responses

### Status code: 201

Successful request.

```
{
 "loadbalancer": {
 "name": "my_loadbalancer",
 "id": "29cc669b-3ac8-4498-9094-bdf6193425c2",
 "project_id": "060576798a80d5762fafc01a9b5eedc7",
 "description": "",
 "vip_port_id": "98697944-0cc7-4d3b-a829-001c2fb82232",
 "vip_address": "192.168.0.214",
 "admin_state_up": true,
 "provisioning_status": "ACTIVE",
 "operating_status": "ONLINE",
 "listeners": [],
 "pools": [],
 "tags": [{
 "key": "tag_key",
 "value": "tag1"
 }],
 "provider": "vlb",
 "created_at": "2023-03-22T07:59:57Z",
 "updated_at": "2023-03-22T07:59:59Z",
 "vpc_id": "a1f33a4c-95b9-48a7-9350-684e2ed844b3",
 "enterprise_project_id": "134f2181-5720-47e7-bd78-1356ed3737d6",
 "availability_zone_list": [],
 "ipv6_vip_address": null,
 "ipv6_vip_virsubnet_id": null,
 "ipv6_vip_port_id": null,
 "publicips": [{
 "publicip_id": "3388574a-4f6f-4471-869e-97d74d21eee9",
 "publicip_address": "88.88.87.205",
 "ip_version": 4
 }],
 "global_eips": [],
 "elb_virsubnet_ids": [],
 "elb_virsubnet_type": null,
 "ip_target_enable": false,
 "autoscaling": {
 "enable": false,
 "min_l7_flavor_id": ""
 },
 "frozen_scene": null,
 "public_border_group": "center",
 "eips": [{
 "eip_id": "3388574a-4f6f-4471-869e-97d74d21eee9",
 "eip_address": "88.88.87.205",
 "ip_version": 4
 }],
 "guaranteed": false,
 "billing_info": null,
 "l4_flavor_id": null,
 "l4_scale_flavor_id": null,
 "l7_flavor_id": null,
 "l7_scale_flavor_id": null,
 "waf_failure_action": "",
 "vip_subnet_cidr_id": "abf31f3b-706e-4e55-a6dc-f2fcc707fd3a"
 },
 "request_id": "bf29597181cb81b30d19f1a0115a157d"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

- Example 1: Creating a load balancer with a private IPv4 address

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class CreateLoadBalancerSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 CreateLoadBalancerRequest request = new CreateLoadBalancerRequest();
 CreateLoadBalancerRequestBody body = new CreateLoadBalancerRequestBody();
 List<String> listLoadbalancerAvailabilityZoneList = new ArrayList<>();
 listLoadbalancerAvailabilityZoneList.add("AZ1");
 CreateLoadBalancerOption loadbalancerbody = new CreateLoadBalancerOption();
 loadbalancerbody.withName("loadbalancer")
 .withDescription("simple lb")
 .withVipSubnetCidrId("1992ec06-f364-4ae3-b936-6a8cc24633b7")
 .withAvailabilityZoneList(listLoadbalancerAvailabilityZoneList)
 .withAdminStateUp(true);
 body.withLoadbalancer(loadbalancerbody);
 request.withBody(body);
 try {
 CreateLoadBalancerResponse response = client.createLoadBalancer(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

```
 }
 }
}
```

- **Example 2: Creating a load balancer with an IPv4 EIP**

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class CreateLoadBalancerSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();

 CreateLoadBalancerRequest request = new CreateLoadBalancerRequest();
 CreateLoadBalancerRequestBody body = new CreateLoadBalancerRequestBody();
 CreateLoadBalancerBandwidthOption bandwidthPublicip = new
 CreateLoadBalancerBandwidthOption();
 bandwidthPublicip.setName("bandwidth_test")
 .withSize(2)
 .withChargeMode(CreateLoadBalancerBandwidthOption.ChargeModeEnum.fromValue("bandw
idth"))
 .withShareType(CreateLoadBalancerBandwidthOption.ShareTypeEnum.fromValue("PER"));
 CreateLoadBalancerPublicIpOption publicipLoadbalancer = new
 CreateLoadBalancerPublicIpOption();
 publicipLoadbalancer.withNetworkType("5_bgp")
 .withBandwidth(bandwidthPublicip);
 List<String> listLoadbalancerAvailabilityZoneList = new ArrayList<>();
 listLoadbalancerAvailabilityZoneList.add("AZ1");
 CreateLoadBalancerOption loadbalancerbody = new CreateLoadBalancerOption();
 loadbalancerbody.setName("elb_eip-test")
 .withVipSubnetCidrId("e6e9271d-aef4-48f0-a93a-ccc7b09032c1")
 .withAvailabilityZoneList(listLoadbalancerAvailabilityZoneList)
 .withAdminStateUp(true)
 .withPublicip(publicipLoadbalancer);
 body.withLoadbalancer(loadbalancerbody);
 request.withBody(body);
 try {
 CreateLoadBalancerResponse response = client.createLoadBalancer(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 }
 }
}
```



```
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

- **Example 3: Creating a gateway load balancer**

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class CreateLoadBalancerSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();

 CreateLoadBalancerRequest request = new CreateLoadBalancerRequest();
 CreateLoadBalancerRequestBody body = new CreateLoadBalancerRequestBody();
 List<String> listLoadbalancerAvailabilityZoneList = new ArrayList<>();
 listLoadbalancerAvailabilityZoneList.add("AZ1");
 CreateLoadBalancerOption loadbalancerbody = new CreateLoadBalancerOption();
 loadbalancerbody.setName("loadbalancer")
 .withDescription("simple gateway lb")
 .withVipSubnetCidrId("1992ec06-f364-4ae3-b936-6a8cc24633b7")
 .withIpv6VipVirusubnetId("8e7aac33-0d87-4cb2-9cce-2856615d607f")
 .withAvailabilityZoneList(listLoadbalancerAvailabilityZoneList)
 .withAdminStateUp(true);
 body.withLoadbalancer(loadbalancerbody);
 request.withBody(body);
 try {
 CreateLoadBalancerResponse response = client.createLoadBalancer(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 }
 }
}
```

```
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
}
```

## Python

- Example 1: Creating a load balancer with a private IPv4 address

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateLoadBalancerRequest()
 listAvailabilityZoneListLoadbalancer = [
 "AZ1"
]
 loadbalancerbody = CreateLoadBalancerOption(
 name="loadbalancer",
 description="simple lb",
 vip_subnet_cidr_id="1992ec06-f364-4ae3-b936-6a8cc24633b7",
 availability_zone_list=listAvailabilityZoneListLoadbalancer,
 admin_state_up=True
)
 request.body = CreateLoadBalancerRequestBody(
 loadbalancer=loadbalancerbody
)
 response = client.create_load_balancer(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

- Example 2: Creating a load balancer with an IPv4 EIP

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *
```

```
if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateLoadBalancerRequest()
 bandwidthPublicip = CreateLoadBalancerBandwidthOption(
 name="bandwidth_test",
 size=2,
 charge_mode="bandwidth",
 share_type="PER"
)
 publicipLoadbalancer = CreateLoadBalancerPublicIpOption(
 network_type="5_bgp",
 bandwidth=bandwidthPublicip
)
 listAvailabilityZoneListLoadbalancer = [
 "AZ1"
]
 loadbalancerbody = CreateLoadBalancerOption(
 name="elb_eip-test",
 vip_subnet_cidr_id="e6e9271d-aef4-48f0-a93a-ccc7b09032c1",
 availability_zone_list=listAvailabilityZoneListLoadbalancer,
 admin_state_up=True,
 publicip=publicipLoadbalancer
)
 request.body = CreateLoadBalancerRequestBody(
 loadbalancer=loadbalancerbody
)
 response = client.create_load_balancer(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

- **Example 3: Creating a gateway load balancer**

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"
```

```
credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

try:
 request = CreateLoadBalancerRequest()
 listAvailabilityZoneListLoadbalancer = [
 "AZ1"
]
 loadbalancerbody = CreateLoadBalancerOption(
 name="loadbalancer",
 description="simple gateway lb",
 vip_subnet_cidr_id="1992ec06-f364-4ae3-b936-6a8cc24633b7",
 ipv6_vip_virsubnet_id="8e7aac33-0d87-4cb2-9cce-2856615d607f",
 availability_zone_list=listAvailabilityZoneListLoadbalancer,
 admin_state_up=True
)
 request.body = CreateLoadBalancerRequestBody(
 loadbalancer=loadbalancerbody
)
 response = client.create_load_balancer(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

- Example 1: Creating a load balancer with a private IPv4 address

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build()
)

 request := &model.CreateLoadBalancerRequest{}
```

```
var listAvailabilityZoneListLoadbalancer = []string{
 "AZ1",
}
nameLoadbalancer:= "loadbalancer"
descriptionLoadbalancer:= "simple lb"
vipSubnetCidrIdLoadbalancer:= "1992ec06-f364-4ae3-b936-6a8cc24633b7"
adminStateUpLoadbalancer:= true
loadbalancerbody := &model.CreateLoadBalancerOption{
 Name: &nameLoadbalancer,
 Description: &descriptionLoadbalancer,
 VipSubnetCidrId: &vipSubnetCidrIdLoadbalancer,
 AvailabilityZoneList: listAvailabilityZoneListLoadbalancer,
 AdminStateUp: &adminStateUpLoadbalancer,
}
request.Body = &model.CreateLoadBalancerRequestBody{
 Loadbalancer: loadbalancerbody,
}
response, err := client.CreateLoadBalancer(request)
if err == nil {
 fmt.Printf("%v\n", response)
} else {
 fmt.Println(err)
}
}
```

- Example 2: Creating a load balancer with an IPv4 EIP

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.CreateLoadBalancerRequest{}
 nameBandwidth:= "bandwidth_test"
 sizeBandwidth:= int32(2)
 chargeModeBandwidth:=
model.GetCreateLoadBalancerBandwidthOptionChargeModeEnum().BANDWIDTH
shareTypeBandwidth:= model.GetCreateLoadBalancerBandwidthOptionShareTypeEnum().PER
 bandwidthPublicip := &model.CreateLoadBalancerBandwidthOption{
 Name: &nameBandwidth,
 Size: &sizeBandwidth,
 ChargeMode: &chargeModeBandwidth,
 ShareType: &shareTypeBandwidth,
 }
```

```
}
publicipLoadbalancer := &model.CreateLoadBalancerPublicIpOption{
 NetworkType: "5_bgp",
 Bandwidth: bandwidthPublicip,
}
var listAvailabilityZoneListLoadbalancer = []string{
 "AZ1",
}
nameLoadbalancer:= "elb_eip-test"
vipSubnetCidrIdLoadbalancer:= "e6e9271d-aef4-48f0-a93a-ccc7b09032c1"
adminStateUpLoadbalancer:= true
loadbalancerbody := &model.CreateLoadBalancerOption{
 Name: &nameLoadbalancer,
 VipSubnetCidrId: &vipSubnetCidrIdLoadbalancer,
 AvailabilityZoneList: listAvailabilityZoneListLoadbalancer,
 AdminStateUp: &adminStateUpLoadbalancer,
 Publicip: publicipLoadbalancer,
}
request.Body = &model.CreateLoadBalancerRequestBody{
 Loadbalancer: loadbalancerbody,
}
response, err := client.CreateLoadBalancer(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

- Example 3: Creating a gateway load balancer

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.CreateLoadBalancerRequest{}
 var listAvailabilityZoneListLoadbalancer = []string{
 "AZ1",
 }
 nameLoadbalancer:= "loadbalancer"
 descriptionLoadbalancer:= "simple gateway lb"
 vipSubnetCidrIdLoadbalancer:= "1992ec06-f364-4ae3-b936-6a8cc24633b7"
```

```
ipv6VipVirsubnetIdLoadbalancer:= "8e7aac33-0d87-4cb2-9cce-2856615d607f"
adminStateUpLoadbalancer:= true
loadbalancerbody := &model.CreateLoadBalancerOption{
 Name: &nameLoadbalancer,
 Description: &descriptionLoadbalancer,
 VipSubnetCidrId: &vipSubnetCidrIdLoadbalancer,
 Ipv6VipVirsubnetId: &ipv6VipVirsubnetIdLoadbalancer,
 AvailabilityZoneList: listAvailabilityZoneListLoadbalancer,
 AdminStateUp: &adminStateUpLoadbalancer,
}
request.Body = &model.CreateLoadBalancerRequestBody{
 Loadbalancer: loadbalancerbody,
}
response, err := client.CreateLoadBalancer(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 201         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.2 Batch Creating Load Balancers

### Function

This API is used to create dedicated or shared load balancers in batches.

When you create load balancers, note the following:

- Specify **vip\_subnet\_cidr\_id** if you want to bind private IPv4 addresses to the load balancers.
- Specify **publicip** and either **vpc\_id** or **vip\_subnet\_cidr\_id** if you want to bind new IPv4 EIPs to the load balancers.
- Specify **publicip\_ids** and either **vpc\_id** or **vip\_subnet\_cidr\_id** if you want to bind existing IPv4 EIPs to the load balancers.
- Specify **ipv6\_vip\_virsubnet\_id** if you want to bind private IPv6 addresses to the load balancers.
- Specify both **ipv6\_vip\_virsubnet\_id** and **ipv6\_bandwidth** if you want to bind public IPv6 addresses to the load balancers.

- Specify **l4\_flavor\_id** if you want to create network load balancers and **l7\_flavor\_id** to create application load balancers. Specify both **l4\_flavor\_id** and **l7\_flavor\_id** if you want to create load balancers that can work at both Layer 4 and Layer 7.
- Do not specify **publicip\_ids**, **vip\_address**, or **ipv6\_vip\_address** when creating load balancers in batches. You cannot bind existing private IPv4 addresses, IPv6 addresses, or public IP addresses to the load balancers.
- If **prepaid\_options** is not specified, pay-per-use load balancers will be created, which are billed by fixed specifications or elastic specifications you have selected for **l4\_flavor\_id** and **l7\_flavor\_id** when creating the load balancers.
- This is an asynchronous API, returning load balancer IDs and job IDs in its response body. You can use the job ID to query the load balancer creation progress.
- The rules for specifying parameters in the request body are different when you create dedicated and shared load balancers in batches. For details, see the description of each parameter in the request body.

## Constraints

There are some constraints when you create load balancers in batches:

- **vpc\_id**, **vip\_subnet\_cidr\_id**, and **ipv6\_vip\_virsubnet\_id** cannot be left blank at the same time.
- If the value of **number** is greater than 1, do not specify **publicip\_ids**, **vip\_address**, and **ipv6\_vip\_address**.
- **ip\_target\_enable** specifies whether to enable **IP as a Backend**. If you set it to **true**, you can associate servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using server IP addresses. If you set it to **false**, the load balancer and the backend servers must be in the same VPC.
- **admin\_state\_up** must be **true**.
- **provider** must be set to **vlb**.
- **elb\_virsubnet\_ids** indicates the subnets that support IPv4/IPv6 dual stack or only IPv4. If only IPv4 subnets are supported, **ipv6\_vip\_virsubnet\_id** must be left blank.
- You can unbind the EIP only on the ELB console. Locate the load balancer in the load balancer list and click **More > Unbind EIP** in the **Operation** column.
- **publicip\_ids** and **publicip** cannot be specified at the same time. Set either **publicip\_ids** to bind an existing EIP to the load balancer, or **publicip** to bind a new EIP to the load balancer, or neither of them.
- If you want to add the load balancer to an existing shared bandwidth, you must specify the ID of the shared bandwidth. If you want the load balancer to use a new dedicated bandwidth, **charge\_mode**, **share\_type**, and **size** are required.
- You cannot bind an existing and unoccupied private IPv4 address, IPv6 address, or public IPv6 address to a load balancer.



## Calling Method

For details, see [Calling APIs](#).

## URI

POST /v3/{project\_id}/elb/loadbalancers/batch-create

**Table 5-58** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-59** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | No        | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-60** Request body parameters

| Parameter    | Mandatory | Type                                                 | Description                                             |
|--------------|-----------|------------------------------------------------------|---------------------------------------------------------|
| loadbalancer | Yes       | <a href="#">BatchCreateLoadBalancerOption</a> object | Specifies the load balancer.<br><b>Constraints:</b> N/A |

**Table 5-61** BatchCreateLoadBalancerOption

| Parameter  | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id         | No        | String           | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                                    |
| ids        | No        | Array of strings | <b>Definition:</b> Specifies the IDs of the load balancers created in batches.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                        |
| project_id | No        | String           | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| number     | No        | Integer          | <b>Definition:</b> Specifies the number of load balancers to be created.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 10<br><b>Default value:</b> 1                                                                                                                                                    |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name        | No        | String | <p><b>Definition:</b> Specifies the load balancer name.</p> <ul style="list-style-type: none"> <li>If the number of load balancers to be created is 1, the load balancer name is the value defined by <b>name</b>.</li> <li>If the number of load balancers to be created is greater than 1, each name is suffixed with a 4-digit number. For example, if you create three load balancers and set <b>name</b> to <b>elb-test</b>, the names of these load balancers are <b>elb-test-0001</b>, <b>elb-test-0002</b>, and <b>elb-test-0003</b>.</li> </ul> <p><b>Constraints:</b> N/A<br/> <b>Range:</b> N/A<br/> <b>Default value:</b> N/A</p> |
| description | No        | String | <p><b>Definition:</b> Provides supplementary information about the load balancers.</p> <p><b>Constraints:</b> N/A<br/> <b>Range:</b> N/A<br/> <b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vip_address | No        | String | <p><b>Definition:</b> Specifies the private IPv4 address of the load balancer. The IP address must be from the IPv4 subnet where the load balancer resides and should not be used by other services.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• <b>vip_subnet_cidr_id</b> is also required if <b>vip_address</b> is specified.</li><li>• If only <b>vip_subnet_cidr_id</b> is specified, the system will automatically assign a private IPv4 address to the load balancer.</li><li>• If neither <b>vip_address</b> nor <b>vip_subnet_cidr_id</b> is specified, no private IPv4 address will be assigned, and the value of <b>vip_address</b> will be <b>null</b>.</li><li>• If the value of <b>number</b> is greater than 1, this parameter cannot be specified and error code 400 will be returned.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

| Parameter                       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>vip_subnet_cidr_id</code> | No        | String | <p><b>Definition:</b> Specifies the ID of the IPv4 subnet where the load balancer works. This parameter is mandatory if you need to create a load balancer with a virtual IPv4 address.</p> <p>You can query parameter <b>neutron_subnet_id</b> in the response by calling the API (GET <a href="https://vpc_endpoint/v1/{project_id}/subnets">https://vpc_endpoint/v1/{project_id}/subnets</a>).</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• <b>vpc_id</b>, <b>vip_subnet_cidr_id</b>, and <b>ipv6_vip_virsubnet_id</b> cannot be left blank at the same time. The subnet specified by <b>vip_subnet_cidr_id</b> and the subnet specified by <b>ipv6_vip_virsubnet_id</b> must be in the VPC specified by <b>vpc_id</b>.</li><li>• The subnet specified by <b>vip_subnet_cidr_id</b> must be in the VPC specified by <b>vpc_id</b> if both <b>vpc_id</b> and <b>vip_subnet_cidr_id</b> are specified.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipv6_vip_virsubnet_id | No        | String | <p><b>Definition:</b> Specifies the ID of the IPv6 subnet where the load balancer works.</p> <p>You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets).</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• <b>vpc_id</b>, <b>vip_subnet_cidr_id</b>, and <b>ipv6_vip_virsubnet_id</b> cannot be left blank at the same time. The subnet specified by <b>vip_subnet_cidr_id</b> and the subnet specified by <b>ipv6_vip_virsubnet_id</b> must be in the VPC specified by <b>vpc_id</b>.</li><li>• IPv6 must have been enabled for the subnet where the load balancer resides.</li><li>• This parameter cannot be specified when shared load balancers are created in batches.</li></ul> <p><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p> |
| provider              | No        | String | <p><b>Definition:</b> Specifies the provider of the load balancer. The value is fixed to <b>vlb</b>.</p> <p><b>Constraints:</b> This parameter cannot be specified when shared load balancers are created in batches.</p> <p><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| l4_flavor_id | No        | String | <p><b>Definition:</b> Specifies the ID of a flavor at Layer 4.</p> <p>You can query parameter <b>id</b> in the response by calling the API (GET https://{ELB_Endpoint}/v3/{project_id}/elb/flavors?type=L4).</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If neither <b>l4_flavor_id</b> nor <b>l7_flavor_id</b> is specified, the default flavor is used. The default flavor varies by site.</li><li>• If the flavor type is <b>L4</b>, the load balancer uses the fixed flavors and will be billed by the flavor you select.</li><li>• If the flavor type is <b>L4_elastic_max</b>, the load balancer uses the elastic flavors and will be billed by how many LCUs you use.</li><li>• This parameter cannot be specified when shared load balancers are created in batches.</li><li>• This parameter is not supported by gateway load balancers.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

| Parameter                 | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>l7_flavor_id</code> | No        | String  | <p><b>Definition:</b> Specifies the ID of a flavor at Layer 7.</p> <p>You can query parameter <b>id</b> in the response by calling the API (GET <code>https://{ELB_Endpoint}/v3/{project_id}/elb/flavors?type=L7</code>).</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If neither <b>l4_flavor_id</b> nor <b>l7_flavor_id</b> is specified, the default flavor is used. The default flavor varies by site.</li><li>• If the flavor type is <b>L7</b>, the load balancer uses the fixed flavors and will be billed by the flavor you select.</li><li>• If the flavor type is <b>L7_elastic_max</b>, the load balancer uses the elastic flavors and will be billed by how many LCUs you use.</li><li>• This parameter cannot be specified when shared load balancers are created in batches.</li><li>• This parameter is not supported by gateway load balancers.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |
| <code>guaranteed</code>   | No        | Boolean | <p><b>Definition:</b> Specifies whether to create dedicated or shared load balancers.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>true:</b> Dedicated load balancers will be created.</li><li>• <b>false:</b> Shared load balancers will be created.</li></ul> <p><b>Default value:</b> <b>true</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |



| Parameter              | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vpc_id                 | No        | String           | <p><b>Definition:</b> Specifies the ID of the VPC where the load balancer is located.</p> <p>You can query parameter <b>id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/vpcs).</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• <b>vpc_id</b>, <b>vip_subnet_cidr_id</b>, and <b>ipv6_vip_virsubnet_id</b> cannot be left blank at the same time. The subnet specified by <b>vip_subnet_cidr_id</b> and the subnet specified by <b>ipv6_vip_virsubnet_id</b> must be in the VPC specified by <b>vpc_id</b>.</li><li>• This parameter cannot be specified when shared load balancers are created in batches.</li></ul> <p><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p> |
| availability_zone_list | Yes       | Array of strings | <p><b>Definition:</b> Specifies the list of AZs where the load balancers can be created.</p> <p>You can query the AZs by calling the API (GET https://{ELB_Endpoint}/v3/{project_id}/elb/availability-zones). Select one or more AZs in the same set.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter cannot be specified when shared load balancers are created in batches.</li></ul> <p><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                      |

| Parameter             | Mandatory | Type                        | Description                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-----------|-----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | String                      | <b>Definition:</b> Specifies the ID of the enterprise project. If no enterprise project ID is specified during resource creation, 0 is returned, indicating that the resource belongs to the default enterprise project.<br><b>Constraints:</b> The enterprise project ID cannot be "", 0, or an enterprise project ID that does not exist.<br><b>Range:</b> N/A<br><b>Default value:</b> 0 |
| tags                  | No        | Array of <b>Tag</b> objects | <b>Definition:</b> Specifies the tags added to the load balancer.<br>Example: <b>"tags": [{"key": "my_tag", "value": "my_tag_value"}]</b><br><b>Constraints:</b> N/A                                                                                                                                                                                                                        |
| admin_state_up        | No        | Boolean                     | <b>Definition:</b> Specifies whether the load balancer is enabled.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> enabled</li><li>• <b>false:</b> disabled</li></ul> <b>Default value:</b> true                                                                                                                                           |
| ipv6_bandwidth        | No        | <b>BandwidthRef</b> object  | <b>Definition:</b> Specifies the ID of the bandwidth.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is available only when you create or update a load balancer with a public address.</li><li>• If you bind a new EIP to the load balancer and specify a shared bandwidth, this EIP will be added to the shared bandwidth.</li></ul>                       |

| Parameter    | Mandatory | Type                                                    | Description                                                                                                                                                                                                                                                                                                                                                                     |
|--------------|-----------|---------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| bandwidth    | No        | <a href="#">BandwidthRef</a> object                     | <p><b>Definition:</b> Specifies the ID of the bandwidth.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>This parameter is available only when you create or update a load balancer with a public address.</li> <li>If you bind a new EIP to the load balancer and specify a shared bandwidth, this EIP will be added to the shared bandwidth.</li> </ul> |
| publicip_ids | No        | Array of strings                                        | <p><b>Definition:</b> Specifies the ID of the EIP bound to the load balancer. Only the first EIP in the array will be bound.</p> <p>If the value of <b>number</b> is greater than 1, this parameter cannot be specified and error code 400 will be returned.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                       |
| publicip     | No        | <a href="#">CreateLoadBalancerPublicIpOption</a> object | <p><b>Definition:</b> Specifies the request parameters for binding a new EIP to the load balancer.</p> <p><b>Constraints:</b> N/A</p>                                                                                                                                                                                                                                           |

| Parameter         | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| elb_virsubnet_ids | No        | Array of strings | <p><b>Definition:</b> Specifies the network IDs of subnets on the downstream plane.</p> <p>You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets).</p> <p>If this parameter is not specified, the network IDs will be used based on the following rules:</p> <ul style="list-style-type: none"><li>• If IPv6 is enabled for a load balancer, the network IDs of subnets specified in <b>ipv6_vip_virsubnet_id</b> will be used.</li><li>• If IPv6 is not enabled for a load balancer, the network IDs of subnets specified in <b>vip_subnet_cidr_id</b> will be used.</li><li>• If a load balancer only works on the public network, any subnet in the VPC where the load balancer is deployed will be used. The subnet with the most available IP addresses is preferred.</li><li>• This parameter cannot be specified when shared load balancers are created in batches.</li><li>• If there is more than one subnet, the first subnet in the list will be used to assign IP addresses.</li></ul> <p><b>Constraints:</b> The subnets must be in the VPC where the load balancer works.</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_target_enable | No        | Boolean | <p><b>Definition:</b> Specifies whether to add backend servers that are not in the load balancer's VPC.</p> <p>If you set it to <b>true</b>, you can associate servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using server IP addresses.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This function cannot be disabled once it is enabled.</li><li>• If you want to enable <b>IP as a Backend</b> for a load balancer in a shared VPC, ensure that a VPC peering connection has been created to connect the VPCs. Otherwise, the communication will fail.</li><li>• This function is supported only by dedicated load balancers.</li><li>• This function is not supported by gateway load balancers.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> <p><b>Default value:</b> false</p> |

| Parameter                  | Mandatory | Type                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------------|-----------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| deletion_protection_enable | No        | Boolean                                    | <p><b>Definition:</b> Specifies whether to enable deletion protection.</p> <p><b>Constraints:</b> This parameter cannot be specified when shared load balancers are created in batches.</p> <p><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).</p> <p><b>Default value:</b> <b>false</b></p> <p><b>NOTE</b><br/>Disable deletion protection or removal protection for your resources before deregistering your account.</p>                                                                                                                                                                                                                                                                                                                                                           |
| autoscaling                | No        | CreateLoadBalancerAutoScalingOption object | <p><b>Definition:</b> Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer flavors can be automatically adjusted based on incoming traffic.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is only available for whitelisted users.</li><li>• If elastic scaling is enabled, <b>l4_flavor_id</b> indicates the ID of the maximum elastic flavor at Layer 4. <b>l7_flavor_id</b> indicates the ID of the maximum elastic flavor at Layer 7.</li></ul> <p><b>NOTE</b><br/>This parameter has been deprecated, but is retained for compatibility purposes. Using this parameter is not recommended. If this parameter is specified, the load balancer with minimum flavors will be created and you will be billed for the minimum flavors.</p> |

| Parameter          | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| waf_failure_action | No        | String | <p><b>Definition:</b> Specifies traffic distributing policies when the WAF is faulty.</p> <p><b>Constraints:</b> This parameter takes effect only when WAF is enabled for the load balancer.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>discard:</b> Traffic will not be distributed.</li><li>• <b>forward:</b> Traffic will be distributed to the backend servers.</li></ul> <p><b>Default value:</b> forward</p> |
| protection_status  | No        | String | <p><b>Definition:</b> Specifies the protection status.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul> <p><b>Default value:</b> nonProtection</p>                                                                                            |
| protection_reason  | No        | String | <p><b>Definition:</b> Specifies why modification protection is enabled.</p> <p><b>Constraints:</b> This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b>.</p> <p><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (&lt;&gt;).</p> <p><b>Default value:</b> N/A</p>                                                                                 |

| Parameter        | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipv6_vip_address | No        | String | <b>Definition:</b> Specifies the IPv6 address of the load balancer.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>If the value of <b>number</b> is greater than 1, this parameter cannot be specified and error code 400 will be returned.</li><li>This parameter cannot be specified when shared load balancers are created in batches.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-62** Tag

| Parameter | Mandatory | Type   | Description                                                      |
|-----------|-----------|--------|------------------------------------------------------------------|
| key       | No        | String | <b>Definition:</b> Specifies the tag key.<br><b>Range:</b> N/A   |
| value     | No        | String | <b>Definition:</b> Specifies the tag value.<br><b>Range:</b> N/A |

**Table 5-63** BandwidthRef

| Parameter | Mandatory | Type   | Description                                                  |
|-----------|-----------|--------|--------------------------------------------------------------|
| id        | Yes       | String | <b>Definition:</b> Specifies the ID of the shared bandwidth. |



**Table 5-64** CreateLoadBalancerPublicIpOption

| Parameter    | Mandatory | Type                                     | Description                                                                                                                                                                                                                                                                                                               |
|--------------|-----------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_version   | No        | Integer                                  | <b>Definition:</b> Specifies the IP address version.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> <b>Default value:</b> 4                                                                                                  |
| network_type | Yes       | String                                   | <b>Definition:</b> Specifies the EIP type. The default value is <b>5_bgp</b> . For more information, see the API for assigning an EIP in the <i>Virtual Private Cloud API Reference</i> .<br><b>Range:</b> 5_bgp<br><b>Default value:</b> 5_bgp                                                                           |
| billing_info | No        | String                                   | <b>Definition:</b> Provides billing information about the EIP.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If the value is left blank, the resource is billed on a pay-per-use basis.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A<br>This parameter is unsupported. Please do not use it. |
| description  | No        | String                                   | <b>Definition:</b> Provides supplementary information about the EIP.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                         |
| bandwidth    | Yes       | CreateLoadBalancerBandwidthOption object | <b>Definition:</b> Provides supplementary information about the bandwidth.<br><b>Constraints:</b> N/A                                                                                                                                                                                                                     |

**Table 5-65** CreateLoadBalancerBandwidthOption

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name      | No        | String  | <b>Definition:</b> Specifies the bandwidth name.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is mandatory if <b>share_type</b> is set to <b>PER</b>.</li><li>• This parameter will be ignored if the bandwidth reference has a specific ID.</li></ul> <b>Range:</b> The value can contain 1 to 64 characters, including digits, letters, underscores (_), hyphens (-), and periods (.).<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                            |
| size      | No        | Integer | <b>Definition:</b> Specifies the bandwidth size.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is mandatory if <b>id</b> is set to <b>null</b>.</li><li>• The minimum increment for bandwidth adjustment varies by bandwidth range. The details are as follows:<ul style="list-style-type: none"><li>– The minimum increment is 1 Mbit/s if the bandwidth range is from 0 Mbit/s to 300 Mbit/s.</li><li>– The minimum increment is 50 Mbit/s if the bandwidth range is from 301 Mbit/s to 1,000 Mbit/s.</li><li>– The minimum increment is 500 Mbit/s if the bandwidth is greater than 1,000 Mbit/s.</li></ul></li></ul> <b>Range:</b> The default value ranges from 1 Mbit/s to 2,000 Mbit/s, which may vary by region and can be viewed on the management console.<br><b>Default value:</b> N/A |

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| charge_mode  | No        | String | <b>Definition:</b> Specifies how the bandwidth used by the EIP is billed.<br><b>Constraints:</b> This parameter is mandatory if <b>id</b> is set to <b>null</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>bandwidth:</b> billed by bandwidth</li><li>• <b>traffic:</b> billed by traffic</li></ul> <b>Default value:</b> N/A                                                                                                                                                                                                                                                |
| share_type   | No        | String | <b>Definition:</b> Specifies the bandwidth type.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is mandatory when <b>id</b> is set to <b>null</b>. It will be ignored if the value of <b>id</b> is not <b>null</b>.</li><li>• The bandwidth ID must be specified if the bandwidth type is set to <b>WHOLE</b>.</li><li>• The bandwidth type cannot be <b>WHOLE</b> for IPv6 EIPs.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>PER:</b> dedicated bandwidths</li><li>• <b>WHOLE:</b> shared bandwidths</li></ul> <b>Default value:</b> N/A |
| billing_info | No        | String | <b>Definition:</b> Provides resource billing information.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                                                                                                                                                                                                  |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                       |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | No        | String | <b>Definition:</b> Specifies the ID of the shared bandwidth. An existing shared bandwidth is used.<br><b>Constraints:</b> The ID must be an existing shared bandwidth ID. There is no need to specify this parameter if the billing mode is yearly/monthly. This parameter will be ignored if it is left blank.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-66** CreateLoadbalancerAutoscalingOption

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                |
|------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable           | Yes       | Boolean | <b>Definition:</b> Specifies whether to enable elastic scaling for the load balancer.<br><b>Constraints:</b> This parameter is not supported by gateway load balancers.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> |
| min_l7_flavor_id | No        | String  | <b>Definition:</b> Specifies the ID of the minimum elastic flavor at Layer 7.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                 |

## Response Parameters

Status code: 202

**Table 5-67** Response body parameters

| Parameter        | Type             | Description                                                                                                                                                                          |
|------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer_ids | Array of strings | <b>Definition:</b> Specifies the IDs of the load balancers to be created in batches.<br><b>Range:</b> N/A                                                                            |
| job_id           | String           | <b>Definition:</b> Specifies task ID of the batch creation.<br><b>Range:</b> N/A                                                                                                     |
| request_id       | String           | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

## Example Requests

- Example 1: Creating three pay-per-use, dedicated load balancers and binding private IPv4 addresses to them

POST https://{ELB\_Endpoint}/v3/060576798a80d5762fafc01a9b5eedc7/elb/loadbalancers/batch-create

```
{
 "loadbalancer" : {
 "name" : "loadbalancer",
 "description" : "simple batch create lb",
 "vip_subnet_cidr_id" : "1992ec06-f364-4ae3-b936-6a8cc24633b7",
 "admin_state_up" : true,
 "availability_zone_list" : ["AZ1"],
 "number" : 3
 }
}
```

- Example 3: Creating three shared load balancers and binding private IPv4 addresses to them

POST https://{ELB\_Endpoint}/v3/060576798a80d5762fafc01a9b5eedc7/elb/loadbalancers/batch-create

```
{
 "loadbalancer" : {
 "name" : "loadbalancer",
 "description" : "simple batch create lb",
 "availability_zone_list" : ["AZ1"],
 "vip_subnet_cidr_id" : "1992ec06-f364-4ae3-b936-6a8cc24633b7",
 "admin_state_up" : true,
 "guaranteed" : false,
 "number" : 3
 }
}
```

## Example Responses

**Status code: 202**

Normal response

```
{
 "job_id" : "060576798a80d5762fafc01a9b5eedc7",

```

```
"loadbalancer_ids" : ["de7946ba-3b77-4119-8338-acc25eb05611", "ba27f70b-b52f-4a77-9220-
fd15726e50bd"],
"request_id" : "bf29597181cb81b30d19f1a0115a157d"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

- Example 1: Creating three pay-per-use, dedicated load balancers and binding private IPv4 addresses to them

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchCreateLoadBalancersSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 BatchCreateLoadBalancersRequest request = new BatchCreateLoadBalancersRequest();
 BatchCreateLoadBalancersRequestBody body = new BatchCreateLoadBalancersRequestBody();
 []string listLoadbalancerAvailabilityZoneList = new ArrayList<>();
 listLoadbalancerAvailabilityZoneList.add("AZ1");
 BatchCreateLoadBalancerOption loadbalancerbody = new BatchCreateLoadBalancerOption();
 loadbalancerbody.withNumber(3)
 .WithName("loadbalancer")
 .withDescription("simple batch create lb")
 .withVipSubnetCidrId("1992ec06-f364-4ae3-b936-6a8cc24633b7")
 .withAvailabilityZoneList(listLoadbalancerAvailabilityZoneList)
 .withAdminStateUp(true);
 body.withLoadbalancer(loadbalancerbody);
 request.withBody(body);
 try {
 BatchCreateLoadBalancersResponse response = client.batchCreateLoadBalancers(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 }
 }
}
```

```
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
}
```

- **Example 3: Creating three shared load balancers and binding private IPv4 addresses to them**

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchCreateLoadBalancersSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();

 BatchCreateLoadBalancersRequest request = new BatchCreateLoadBalancersRequest();
 BatchCreateLoadBalancersRequestBody body = new BatchCreateLoadBalancersRequestBody();
 List<String> listLoadbalancerAvailabilityZoneList = new ArrayList<>();
 listLoadbalancerAvailabilityZoneList.add("AZ1");
 BatchCreateLoadBalancerOption loadbalancerbody = new BatchCreateLoadBalancerOption();
 loadbalancerbody.withNumber(3)
 .withName("loadbalancer")
 .withDescription("simple batch create lb")
 .withVipSubnetCidrId("1992ec06-f364-4ae3-b936-6a8cc24633b7")
 .withGuaranteed(false)
 .withAvailabilityZoneList(listLoadbalancerAvailabilityZoneList)
 .withAdminStateUp(true);
 body.withLoadbalancer(loadbalancerbody);
 request.withBody(body);
 try {
 BatchCreateLoadBalancersResponse response = client.batchCreateLoadBalancers(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 }
 }
}
```

```
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
}
```

## Python

- Example 1: Creating three pay-per-use, dedicated load balancers and binding private IPv4 addresses to them

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = BatchCreateLoadBalancersRequest()
 listAvailabilityZoneListLoadbalancer = [
 "AZ1"
]
 loadbalancerbody = BatchCreateLoadBalancerOption(
 number=3,
 name="loadbalancer",
 description="simple batch create lb",
 vip_subnet_cidr_id="1992ec06-f364-4ae3-b936-6a8cc24633b7",
 availability_zone_list=listAvailabilityZoneListLoadbalancer,
 admin_state_up=True
)
 request.body = BatchCreateLoadBalancersRequestBody(
 loadbalancer=loadbalancerbody
)
 response = client.batch_create_load_balancers(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

- Example 3: Creating three shared load balancers and binding private IPv4 addresses to them



```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = BatchCreateLoadBalancersRequest()
 listAvailabilityZoneListLoadbalancer = [
 "AZ1"
]
 loadbalancerbody = BatchCreateLoadBalancerOption(
 number=3,
 name="loadbalancer",
 description="simple batch create lb",
 vip_subnet_cidr_id="1992ec06-f364-4ae3-b936-6a8cc24633b7",
 guaranteed=False,
 availability_zone_list=listAvailabilityZoneListLoadbalancer,
 admin_state_up=True
)
 request.body = BatchCreateLoadBalancersRequestBody(
 loadbalancer=loadbalancerbody
)
 response = client.batch_create_load_balancers(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

- Example 1: Creating three pay-per-use, dedicated load balancers and binding private IPv4 addresses to them

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
```

```
environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before
running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.BatchCreateLoadBalancersRequest{}
var listAvailabilityZoneListLoadbalancer = []string{
 "AZ1",
}
numberLoadbalancer:= int32(3)
nameLoadbalancer:= "loadbalancer"
descriptionLoadbalancer:= "simple batch create lb"
vipSubnetCidrIdLoadbalancer:= "1992ec06-f364-4ae3-b936-6a8cc24633b7"
adminStateUpLoadbalancer:= true
loadbalancerbody := &model.BatchCreateLoadBalancerOption{
 Number: &numberLoadbalancer,
 Name: &nameLoadbalancer,
 Description: &descriptionLoadbalancer,
 VipSubnetCidrId: &vipSubnetCidrIdLoadbalancer,
 AvailabilityZoneList: listAvailabilityZoneListLoadbalancer,
 AdminStateUp: &adminStateUpLoadbalancer,
}
request.Body = &model.BatchCreateLoadBalancersRequestBody{
 Loadbalancer: loadbalancerbody,
}
response, err := client.BatchCreateLoadBalancers(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

- Example 3: Creating three shared load balancers and binding private IPv4 addresses to them

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
}
```

```
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.BatchCreateLoadBalancersRequest{}
var listAvailabilityZoneListLoadbalancer = []string{
 "AZ1",
}
numberLoadbalancer:= int32(3)
nameLoadbalancer:= "loadbalancer"
descriptionLoadbalancer:= "simple batch create lb"
vipSubnetCidrIdLoadbalancer:= "1992ec06-f364-4ae3-b936-6a8cc24633b7"
guaranteedLoadbalancer:= false
adminStateUpLoadbalancer:= true
loadbalancerbody := &model.BatchCreateLoadBalancerOption{
 Number: &numberLoadbalancer,
 Name: &nameLoadbalancer,
 Description: &descriptionLoadbalancer,
 VipSubnetCidrId: &vipSubnetCidrIdLoadbalancer,
 Guaranteed: &guaranteedLoadbalancer,
 AvailabilityZoneList: listAvailabilityZoneListLoadbalancer,
 AdminStateUp: &adminStateUpLoadbalancer,
}
request.Body = &model.BatchCreateLoadBalancersRequestBody{
 Loadbalancer: loadbalancerbody,
}
response, err := client.BatchCreateLoadBalancers(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description     |
|-------------|-----------------|
| 202         | Normal response |

## Error Codes

See [Error Codes](#).

## 5.6.3 Copying a Load Balancer

### Function

This API is used to copy a load balancer.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/clone

**Table 5-68** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                            |

### Request Parameters

**Table 5-69** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-70** Request body parameters

| Parameter                 | Mandatory | Type                                           | Description                                                                                                                                           |
|---------------------------|-----------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| count                     | No        | Integer                                        | <b>Definition:</b> Specifies the maximum number of replicas at a time.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 10<br><b>Default value:</b> 1 |
| target_loadbalancer_param | Yes       | <a href="#">TargetLoadbalancerParam</a> object | <b>Definition:</b> Specifies the parameters of the new load balancer.<br><b>Constraints:</b> N/A                                                      |

**Table 5-71** TargetLoadbalancerParam

| Parameter              | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                      |
|------------------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name                   | No        | String           | <b>Definition:</b> Specifies the name of the new load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> If this parameter is not specified, the new load balancer name will be the original load balancer name plus suffix copy-x. x indicates the serial number.                                               |
| availability_zone_list | No        | Array of strings | <b>Definition:</b> Specifies the AZ where new load balancer works.<br><b>Constraints:</b> This parameter is available only for copying a dedicated load balancer.<br><b>Range:</b> N/A<br><b>Default value:</b> If this parameter is not specified, the AZs defined in <b>availability_zone_list</b> of the original load balancer will be used. |

| Parameter              | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vip_subnet_cidr_id     | No        | String | <p><b>Definition:</b> Specifies the ID of the IPv4 subnet where the new load balancer works.</p> <p><b>Constraints:</b> The subnets where the original and new load balancers work must be in the same VPC.</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> If this parameter is not specified, the IPv4 subnet defined by <b>vip_subnet_cidr_id</b> of the original load balancer is used.</p>                                                                                                                                            |
| vip_address            | No        | String | <p><b>Definition:</b> Specifies the private IPv4 address of the new load balancer.</p> <p><b>Constraints:</b> This parameter is available only when you copy a dedicated or shared load balancer as a dedicated load balancer.</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> If this parameter is not specified, a private IPv4 address in the subnet defined by <b>vip_subnet_cidr_id</b> will be randomly assigned to the new load balancer.</p>                                                                                       |
| ipv6_vip_virusubnet_id | No        | String | <p><b>Definition:</b> Specifies the ID of the IPv6 subnet where the new load balancer works.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>• This parameter is available only for copying a dedicated load balancer.</li> <li>• The subnets where the original and new load balancers work must be in the same VPC.</li> </ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> If this parameter is not specified, the IPv6 subnet defined by <b>ipv6_vip_virusubnet_id</b> of the original load balancer is used.</p> |

| Parameter         | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipv6_vip_address  | No        | String           | <b>Definition:</b> Specifies the private IPv6 address of the new load balancer.<br><b>Constraints:</b> This parameter is available only for copying a dedicated load balancer.<br><b>Range:</b> N/A<br><b>Default value:</b> If this parameter is not specified, a private IPv6 address in the subnet defined by <b>ipv6_vip_virsubnet_id</b> will be randomly assigned to the new load balancer.                                                                                                                    |
| elb_virsubnet_ids | No        | Array of strings | <b>Definition:</b> Specifies the ID of the backend subnet of the new load balancer.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is available only when you copy a dedicated or shared load balancer as a dedicated load balancer.</li><li>• The subnets where the original and new load balancers work must be in the same VPC.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> If this parameter is not specified, the backend subnet of the original load balancer is used. |
| l4_flavor_id      | No        | String           | <b>Definition:</b> Specifies the Layer 4 flavor of the new load balancer.<br><b>Constraints:</b> This parameter is available only when you copy a dedicated or shared load balancer as a dedicated load balancer.<br><b>Range:</b> N/A<br><b>Default value:</b> If this parameter is not specified, the Layer 4 flavor of the original load balancer is used.                                                                                                                                                        |

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| l7_flavor_id          | No        | String | <b>Definition:</b> Specifies the Layer 7 flavor of the new load balancer.<br><b>Constraints:</b> This parameter is available only when you copy a dedicated or shared load balancer as a dedicated load balancer.<br><b>Range:</b> N/A<br><b>Default value:</b> If this parameter is not specified, the Layer 7 flavor of the original load balancer is used. |
| enterprise_project_id | No        | String | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> If this parameter is not specified, the enterprise project of the original load balancer is used.                                                                                                                     |



| Parameter  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reuse_pool | No        | Boolean | <p><b>Definition:</b> Specifies whether to reuse the backend server group of the original load balancer.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If this parameter is set to <b>true</b>, the backend server groups of the original listener must be associated with multiple load balancers.</li><li>• This parameter is invalid when <b>enterprise_project_id</b> is set to the ID of another enterprise project.</li><li>• This parameter can be set to <b>true</b> only when you copy a dedicated or shared load balancer as a dedicated load balancer.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>false:</b> A new backend server group will be created and associated with the new load balancer.</li><li>• <b>true:</b> The backend server group of the original load balancer will be used.</li></ul> <p><b>Default value:</b> false</p> |

| Parameter  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| guaranteed | No        | Boolean | <b>Definition:</b> Specifies the type of the new load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>false:</b> A new shared load balancer will be created. The original load balancer must be a shared load balancer.</li><li>• <b>true:</b> A dedicated load balancer will be created. The original load balancer can be a shared or dedicated load balancer.</li></ul> <b>Default value:</b> <ul style="list-style-type: none"><li>• <b>true</b> if the original load balancer is a dedicated load balancer.</li><li>• <b>false</b> if the original load balancer is a shared load balancer.</li></ul> |

## Response Parameters

Status code: 200

Table 5-72 Response body parameters

| Parameter         | Type                                               | Description                                                                                                                                                                          |
|-------------------|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer_list | Array of <a href="#">loadbalancer_list</a> objects | <b>Definition:</b> Specifies the information about the new load balancer.<br><b>Range:</b> N/A                                                                                       |
| request_id        | String                                             | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| job_id            | String                                             | <b>Definition:</b> Specifies the copy task ID.<br><b>Range:</b> N/A                                                                                                                  |

**Table 5-73** loadbalancer\_list

| Parameter | Type   | Description                                                                        |
|-----------|--------|------------------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the ID of the new load balancer.<br><b>Range:</b> N/A |

## Example Requests

Copying a load balancer

```
POST https://{ELB_Endpoint}/v3/{project_id}/elb/loadbalancers/{loadbalancer_id}/clone
{
 "target_loadbalancer_param": {
 "availability_zone_list": ["az1", "az2"],
 "vip_address": "1.1.1.1",
 "guaranteed": true
 }
}
```

## Example Responses

**Status code: 200**

Normal response

```
{
 "loadbalancer_list": [{
 "id": "00ac869a-16f2-4335-b40a-15f277604f18"
 }],
 "request_id": "53013c36-751b-4687-9819-cc0bb609468c",
 "job_id": "3ccae6c1-615c-48b4-82b5-abfcdcb82849"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Copying a load balancer

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class CloneLoadbalancerSolution {

 public static void main(String[] args) {
```

```
// The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before running
this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
CloneLoadbalancerRequest request = new CloneLoadbalancerRequest();
request.withLoadbalancerId("{loadbalancer_id}");
CloneLoadbalancerRequestBody body = new CloneLoadbalancerRequestBody();
List<String> listTargetLoadbalancerParamAvailabilityZoneList = new ArrayList<>();
listTargetLoadbalancerParamAvailabilityZoneList.add("az1");
listTargetLoadbalancerParamAvailabilityZoneList.add("az2");
TargetLoadbalancerParam targetLoadbalancerParambody = new TargetLoadbalancerParam();
targetLoadbalancerParambody.withAvailabilityZoneList(listTargetLoadbalancerParamAvailabilityZoneList)
 .withVipAddress("1.1.1.1")
 .withGuaranteed(true);
body.withTargetLoadbalancerParam(targetLoadbalancerParambody);
request.withBody(body);
try {
 CloneLoadbalancerResponse response = client.cloneLoadbalancer(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

### Copying a load balancer

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskgelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskgelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.getenv("CLOUD_SDK_AK")
 sk = os.getenv("CLOUD_SDK_SK")
 projectId = "{project_id}"
```

```
credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

try:
 request = CloneLoadbalancerRequest()
 request.loadbalancer_id = "{loadbalancer_id}"
 listAvailabilityZoneListTargetLoadbalancerParam = [
 "az1",
 "az2"
]
 targetLoadbalancerParambody = TargetLoadbalancerParam(
 availability_zone_list=listAvailabilityZoneListTargetLoadbalancerParam,
 vip_address="1.1.1.1",
 guaranteed=True
)
 request.body = CloneLoadbalancerRequestBody(
 target_loadbalancer_param=targetLoadbalancerParambody
)
 response = client.clone_loadbalancer(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Copying a load balancer

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.CloneLoadbalancerRequest{}
 request.LoadbalancerId = "{loadbalancer_id}"
```

```
var listAvailabilityZoneListTargetLoadbalancerParam = []string{
 "az1",
 "az2",
}
vipAddressTargetLoadbalancerParam:= "1.1.1.1"
guaranteedTargetLoadbalancerParam:= true
targetLoadbalancerParambody := &model.TargetLoadbalancerParam{
 AvailabilityZoneList: &listAvailabilityZoneListTargetLoadbalancerParam,
 VipAddress: &vipAddressTargetLoadbalancerParam,
 Guaranteed: &guaranteedTargetLoadbalancerParam,
}
request.Body = &model.CloneLoadbalancerRequestBody{
 TargetLoadbalancerParam: targetLoadbalancerParambody,
}
response, err := client.CloneLoadbalancer(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description     |
|-------------|-----------------|
| 200         | Normal response |

## Error Codes

See [Error Codes](#).

## 5.6.4 Querying Load Balancers

### Function

This API is used to query all load balancers.

### Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query.
- Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

### Calling Method

For details, see [Calling APIs](#).

## URI

GET /v3/{project\_id}/elb/loadbalancers

**Table 5-74** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

**Table 5-75** Query Parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker    | No        | String  | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| limit     | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000                                                                                                                                                                                                                                                                  |

| Parameter    | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse | No        | Boolean          | <b>Definition:</b> Specifies whether to use reverse query.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true</b>: Query resources on the previous page.</li><li>• <b>false</b>: Query resources on the next page.</li></ul> <b>Default value:</b> false |
| id           | No        | Array of strings | <b>Definition:</b> Specifies the load balancer ID.<br>Multiple values can be used for query in the format of:<br><i>id=xxx&amp;id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                     |
| name         | No        | Array of strings | <b>Definition:</b> Specifies the load balancer name.<br>Multiple values can be used for query in the format of:<br><i>name=xxx&amp;name=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                               |



| Parameter           | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description         | No        | Array of strings | <b>Definition:</b> Provides supplementary information about the load balancer.<br>Multiple values can be used for query in the format of:<br><i>description=xxx&amp;description=xx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                         |
| admin_state_up      | No        | Boolean          | <b>Definition:</b> Specifies whether the load balancer is enabled.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> enabled</li><li>• <b>false:</b> disabled</li></ul> <b>Default value:</b> N/A                                                                                                                                              |
| include_recycle_bin | No        | Boolean          | <b>Definition:</b> Specifies whether to query the load balancers in the recycle bin.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Load balancers in the recycle bin will be returned.</li><li>• <b>false:</b> Load balancers in the recycle bin will not be returned.</li></ul> <b>Default value:</b> N/A                                 |
| provisioning_status | No        | Array of strings | <b>Definition:</b> Specifies the provisioning status of the load balancer.<br>Multiple values can be used for query in the format of:<br><i>provisioning_status=xxx&amp;provisioning_status=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ACTIVE:</b> in use</li><li>• <b>PENDING_DELETE:</b> deleting</li></ul> <b>Default value:</b> N/A |

| Parameter        | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                    |
|------------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | No        | Array of strings | <b>Definition:</b> Specifies the operating status of the load balancer.<br><br>Multiple values can be used for query in the format of:<br><i>operating_status=xxx&amp;operating_status=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> running</li><li>• <b>FROZEN:</b> frozen</li></ul> <b>Default value:</b> N/A |
| guaranteed       | No        | Boolean          | <b>Definition:</b> Specifies whether the load balancer is a dedicated load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>false:</b> The load balancer is a shared load balancer.</li><li>• <b>true:</b> The load balancer is a dedicated load balancer.</li></ul> <b>Default value:</b> N/A                                 |
| vpc_id           | No        | Array of strings | <b>Definition:</b> Specifies the ID of the VPC where the load balancer is located.<br><br>Multiple values can be used for query in the format of<br><i>vpc_id=xxx&amp;vpc_id=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                             |
| vip_port_id      | No        | Array of strings | <b>Definition:</b> Specifies the ID of the port bound to the private IPv4 address of the load balancer.<br><br>Multiple values can be used for query in the format of:<br><i>vip_port_id=xxx&amp;vip_port_id=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                             |

| Parameter                       | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                     |
|---------------------------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>vip_address</code>        | No        | Array of strings | <b>Definition:</b> Specifies the private IPv4 address of the load balancer.<br>Multiple values can be used for query in the format of:<br><i>vip_address=xxx&amp;vip_address=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                              |
| <code>vip_subnet_cidr_id</code> | No        | Array of strings | <b>Definition:</b> Specifies the ID of the IPv4 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br>Multiple values can be used for query in the format of:<br><i>vip_subnet_cidr_id=xxx&amp;vip_subnet_cidr_id=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| <code>ipv6_vip_port_id</code>   | No        | Array of strings | <b>Definition:</b> Specifies the ID of the port bound to the IPv6 address of the load balancer.<br>Multiple values can be used for query in the format of:<br><i>ipv6_vip_port_id=xxx&amp;ipv6_vip_port_id=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                |
| <code>ipv6_vip_address</code>   | No        | Array of strings | <b>Definition:</b> Specifies the IPv6 address of the load balancer.<br>Multiple values can be used for query in the format of:<br><i>ipv6_vip_address=xxx&amp;ipv6_vip_address=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                            |

| Parameter             | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                               |
|-----------------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipv6_vip_virsubnet_id | No        | Array of strings | <b>Definition:</b> Specifies the ID of the IPv6 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br><br>Multiple values can be used for query in the format of:<br><i>ipv6_vip_virsubnet_id=xxx&amp;ipv6_vip_virsubnet_id=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| eips      | No        | Array of strings | <p><b>Definition:</b> Specifies the EIP bound to the load balancer. The following is an example:</p> <pre>"eips": [<br/>  {<br/>    "eip_id":<br/>    "e9b72a9d-4275-455e-<br/>a724-853504e4d9c6",<br/>    "eip_address": "88.88.14.122",<br/>    "ip_version": 4<br/>  }<br/>]</pre> <p>If you want to query the load balancers that have the above EIP bound, you can use the following format:</p> <pre>eips=ip_version<br/>%3D4&amp;eips=eip_address<br/>%3D88.88.14.122&amp;eips=eip_id<br/>%3De9b72a9d-4275-455e-<br/>a724-853504e4d9c6</pre> <p>Multiple values can be used for query.</p> <ul style="list-style-type: none"><li>• If <b>eip_id</b> is used as the query condition, the format is<br/><i>eips=eip_id=xxx&amp;eips=eip_id=xxx.</i></li><li>• If <b>eip_address</b> is used as the query condition, the format is<br/><i>eips=eip_address=xxx&amp;eips=eip_address=xxx.</i></li><li>• If <b>ip_version</b> is used as the query condition, the format is<br/><i>eips=ip_version=xxx&amp;eips=ip_version=xxx.</i></li></ul> <p><b>Constraints:</b> N/A<br/><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p> <p>Note that this parameter has the same meaning as <b>publicips</b>.</p> |

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|-----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| publicips | No        | Array of strings | <p><b>Definition:</b> Specifies the EIP bound to the load balancer. The following is an example:</p> <pre>"publicips=": [<br/>  {<br/>    "public_id":<br/>    "e9b72a9d-4275-455e-<br/>a724-853504e4d9c6",<br/>    "public_address":<br/>    "88.88.14.122",<br/>    "ip_version": 4<br/>  }<br/>]</pre> <p>If you want to query the load balancers that have the above EIP bound, you can use the following format:</p> <pre>publicips=ip_version<br/>%3D4&amp;publicips=public_addre<br/>ss<br/>%3D88.88.14.122&amp;publicips=p<br/>ublic_id<br/>%3De9b72a9d-4275-455e-<br/>a724-853504e4d9c6</pre> <p>Multiple values can be used for query.</p> <ul style="list-style-type: none"><li>• If <b>publicip_id</b> is used as the query condition, the format is<br/><i>publicips=publicip_id=xxx&amp;publicips=publicip_id=xxx.</i></li><li>• If <b>publicip_address</b> is used as the query condition, the format is<br/><i>publicips=publicip_address=xxx&amp;publicips=publicip_address=xxx.</i></li><li>• If <b>ip_version</b> is used as the query condition, the format is<br/><i>publicips=ip_version=xxx&amp;publicips=ip_version=xxx.</i></li></ul> <p><b>Constraints:</b> N/A<br/><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p> |

| Parameter              | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                       |
|------------------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        |           |                  | Note: This parameter has the same meaning as <b>eips</b> .                                                                                                                                                                                                                                                                        |
| availability_zone_list | No        | Array of strings | <b>Definition:</b> Specifies the list of AZs where the load balancers are created.<br>Multiple values can be used for query in the format of:<br><i>availability_zone_list=xxx&amp;availability_zone_list=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                   |
| l4_flavor_id           | No        | Array of strings | <b>Definition:</b> Specifies the ID of a flavor at Layer 4.<br>Multiple values can be used for query in the format of:<br><i>l4_flavor_id=xxx&amp;l4_flavor_id=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                              |
| l4_scale_flavor_id     | No        | Array of strings | <b>Definition:</b> Specifies the ID of an elastic flavor at Layer 4.<br>Multiple values can be used for query in the format of:<br><i>l4_scale_flavor_id=xxx&amp;l4_scale_flavor_id=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>This parameter is unsupported. Please do not use it. |

| Parameter          | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                       |
|--------------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| l7_flavor_id       | No        | Array of strings | <b>Definition:</b> Specifies the ID of a flavor at Layer 7.<br>Multiple values can be used for query in the format of:<br><i>l7_flavor_id=xxx&amp;l7_flavor_id=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                              |
| l7_scale_flavor_id | No        | Array of strings | <b>Definition:</b> Specifies the ID of an elastic flavor at Layer 7.<br>Multiple values can be used for query in the format of:<br><i>l7_scale_flavor_id=xxx&amp;l7_scale_flavor_id=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>This parameter is unsupported. Please do not use it. |
| billing_info       | No        | Array of strings | <b>Definition:</b> Provides resource billing information.<br>Multiple values can be used for query in the format of:<br><i>billing_info=xxx&amp;billing_info=xx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>This parameter is unsupported. Please do not use it.                         |



| Parameter        | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_device_id | No        | Array of strings | <b>Definition:</b> Specifies the ID of the ECS that is associated with the load balancer as a backend server. This is a query parameter and will not be included in the response.<br><br>Multiple values can be used for query in the format of:<br><i>member_device_id=xxx&amp;member_device_id=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A             |
| member_address   | No        | Array of strings | <b>Definition:</b> Specifies the private IP address of the ECS that is associated with the load balancer as a backend server. This is a query parameter and will not be included in the response.<br><br>Multiple values can be used for query in the format of:<br><i>member_address=xxx&amp;member_address=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter             | Mandatory | Type              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------|-----------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | Array of strings  | <p><b>Definition:</b> Specifies the ID of the enterprise project where the load balancer is used.</p> <p>Multiple values can be used for query in the format of:<br/><i>enterprise_project_id=xxx&amp;enterprise_project_id=xxx.</i></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enterprise_project_id</b> is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:loadbalancers:list</b> permission must be assigned to the user group.</li><li>• If <b>enterprise_project_id</b> is specified, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:loadbalancers:list</b> permission are queried.</li></ul> <p><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p> |
| ip_version            | No        | Array of integers | <p><b>Definition:</b> Specifies the IP address version.</p> <p>Multiple values can be used for query in the format of:<br/><i>ip_version=xxx&amp;ip_version=xxx.</i></p> <p><b>Constraints:</b> N/A<br/><b>Range:</b> <b>4</b> (IPv4 addresses) or <b>6</b> (IPv6 addresses)<br/><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Parameter                  | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| deletion_protection_enable | No        | Boolean          | <b>Definition:</b> Specifies whether to enable deletion protection.<br><b>Constraints:</b> N/A<br><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).<br><b>Default value:</b> N/A                                                                                                                                                                                                                 |
| elb_virsubnet_type         | No        | Array of strings | <b>Definition:</b> Specifies the type of the subnet on the downstream plane.<br>Multiple values can be used for query in the format of:<br><i>elb_virsubnet_type=ipv4&amp;elb_virsubnet_type=dualstack</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ipv4:</b> IPv4 subnets</li><li>• <b>dualstack:</b> subnets that support IPv4/IPv6 dual stack</li></ul> <b>Default value:</b> N/A |
| autoscaling                | No        | Array of strings | <b>Definition:</b> Specifies whether to enable elastic scaling.<br>Example:<br>"autoscaling": {<br>"enable": "true"<br>}<br>Multiple values can be used for query in the format of:<br><i>autoscaling=enable=true&amp;autoscaling=enable=false</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                    |

| Parameter         | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                |
|-------------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_status | No        | Array of strings | <b>Definition:</b> Specifies the protection status.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul> <b>Default value:</b> nonProtection |

| Parameter   | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| global_eips | No        | Array of strings | <p><b>Definition:</b> Specifies the EIP bound to the load balancer. The following shows an example:</p> <pre>{<br/>  "global_eips": [<br/>    {<br/>      "global_eip_id":<br/>      "240000000-0000-0000-0000-1<br/>      000000000001",<br/>      "global_eip_address":<br/>      "10.10.10.10",<br/>      "ip_version": 4<br/>    }<br/>  ]<br/>}</pre> <p>Multiple values can be used for query in the format of:</p> <ul style="list-style-type: none"><li>• If <b>global_eip_id</b> is used as the query condition, the format is<br/><i>global_eips=global_eip_id=xxx&amp;global_eips=global_eip_id=xxx.</i></li><li>• If <b>global_eip_address</b> is used as the query condition, the format is<br/><i>global_eips=global_eip_address=xxx&amp;global_eips=global_eip_address=xxx.</i></li><li>• If <b>ip_version</b> is used as the query condition, the format is<br/><i>global_eips=ip_version=xxx&amp;global_eips=ip_version=xxx.</i></li></ul> <p><b>Constraints:</b> N/A<br/><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p> |

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                              |
|--------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| log_topic_id | No        | String | <b>Definition:</b> Specifies the ID of the log topic that is associated with the load balancer.<br>Multiple values can be used for query in the format of:<br><i>log_topic_id=xxx&amp;log_topic_id=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| log_group_id | No        | String | <b>Definition:</b> Specifies the ID of the log group that is associated with the load balancer.<br>Multiple values can be used for query in the format of:<br><i>log_group_id=xxx&amp;log_group_id=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-76** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | No        | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-77** Response body parameters

| Parameter     | Type                                          | Description                                                                                                                                                                          |
|---------------|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancers | Array of <a href="#">LoadBalancer</a> objects | <b>Definition:</b> Lists the load balancers.                                                                                                                                         |
| page_info     | <a href="#">PageInfo</a> object               | <b>Definition:</b> Specifies the pagination information.                                                                                                                             |
| request_id    | String                                        | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-78** LoadBalancer

| Parameter           | Type                                     | Description                                                                                                                                                                                                   |
|---------------------|------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                  | String                                   | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A                                                                                                                                       |
| description         | String                                   | <b>Definition:</b> Provides supplementary information about the load balancer.<br><b>Range:</b> N/A                                                                                                           |
| provisioning_status | String                                   | <b>Definition:</b> Specifies the provisioning status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ACTIVE:</b> in use</li><li>• <b>PENDING_DELETE:</b> deleting</li></ul> |
| admin_state_up      | Boolean                                  | <b>Definition:</b> Specifies whether the load balancer is enabled.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> enabled</li><li>• <b>false:</b> disabled</li></ul>                   |
| provider            | String                                   | <b>Definition:</b> Specifies the provider of the load balancer. The value is fixed to <b>vlb</b> .<br><b>Range:</b> N/A                                                                                       |
| pools               | Array of <a href="#">PoolRef</a> objects | <b>Definition:</b> Lists the IDs of backend server groups associated with the load balancer.                                                                                                                  |

| Parameter          | Type                                         | Description                                                                                                                                                                                                                                  |
|--------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listeners          | Array of <a href="#">ListenerRef</a> objects | <b>Definition:</b> Lists the IDs of listeners associated with the load balancer.                                                                                                                                                             |
| operating_status   | String                                       | <b>Definition:</b> Specifies the operating status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The load balancer is online.</li><li>• <b>FROZEN:</b> The load balancer is frozen.</li></ul> |
| name               | String                                       | <b>Definition:</b> Specifies the load balancer name.<br><b>Range:</b> N/A                                                                                                                                                                    |
| project_id         | String                                       | <b>Definition:</b> Specifies the ID of the project where the load balancer is used.<br><b>Range:</b> N/A                                                                                                                                     |
| vip_subnet_cidr_id | String                                       | <b>Definition:</b> Specifies the ID of the IPv4 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br><b>Range:</b> N/A                                                                              |
| vip_address        | String                                       | <b>Definition:</b> Specifies the private IPv4 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                             |
| vip_port_id        | String                                       | <b>Definition:</b> Specifies the ID of the port bound to the private IPv4 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                 |
| tags               | Array of <a href="#">Tag</a> objects         | <b>Definition:</b> Specifies the tags added to the load balancer.                                                                                                                                                                            |
| created_at         | String                                       | <b>Definition:</b> Specifies the time when the load balancer was created.<br><b>Range:</b><br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                           |



| Parameter              | Type                                     | Description                                                                                                                                                                                                                                                                               |
|------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at             | String                                   | <b>Definition:</b> Specifies the time when the load balancer was updated.<br><b>Range:</b><br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                        |
| guaranteed             | Boolean                                  | <b>Definition:</b> Specifies whether the load balancer is a dedicated load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>false:</b> The load balancer is a shared load balancer.</li><li>• <b>true:</b> The load balancer is a dedicated load balancer.</li></ul> |
| vpc_id                 | String                                   | <b>Definition:</b> Specifies the ID of the VPC where the load balancer is located.<br><b>Range:</b> N/A                                                                                                                                                                                   |
| eips                   | Array of <a href="#">EipInfo</a> objects | <b>Definition:</b> Specifies the EIP bound to the load balancer.<br><b>NOTE</b><br>This parameter has the same meaning as <b>publicips</b> .                                                                                                                                              |
| ipv6_vip_address       | String                                   | <b>Definition:</b> Specifies the IPv6 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                                                  |
| ipv6_vip_virsubnet_id  | String                                   | <b>Definition:</b> Specifies the ID of the IPv6 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br><b>Range:</b> N/A                                                                                                                           |
| ipv6_vip_port_id       | String                                   | <b>Definition:</b> Specifies the ID of the port bound to the IPv6 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                      |
| availability_zone_list | Array of strings                         | <b>Definition:</b> Specifies the list of AZs where the load balancers are created.<br><b>Range:</b> N/A                                                                                                                                                                                   |

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                       |
|-----------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | String | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |
| billing_info          | String | <b>Definition:</b> Provides resource billing information.<br><b>Range:</b> <ul style="list-style-type: none"><li>• If the value is left blank, the resource is billed on a pay-per-use basis.</li></ul> <p>This parameter is unsupported. Please do not use it.</p>               |
| l4_flavor_id          | String | <b>Definition:</b> Specifies the ID of a flavor at Layer 4.<br>If the current load balancer is an elastic flavor instance, this parameter defines the maximum elastic flavor at Layer 4.<br><b>Range:</b> N/A                                                                     |
| l4_scale_flavor_id    | String | <b>Definition:</b> Specifies the ID of an elastic flavor at Layer 4.<br><b>Range:</b> N/A<br><b>NOTE</b><br>This parameter has been discarded. Do not use it.                                                                                                                     |
| l7_flavor_id          | String | <b>Definition:</b> Specifies the ID of a flavor at Layer 7.<br>If the current load balancer is an elastic flavor instance, this parameter defines the maximum elastic flavor at Layer 7.<br><b>Range:</b> N/A                                                                     |
| l7_scale_flavor_id    | String | <b>Definition:</b> Specifies the ID of an elastic flavor at Layer 7.<br><b>Range:</b> N/A<br><b>NOTE</b><br>This parameter has been discarded. Do not use it.                                                                                                                     |

| Parameter          | Type                                  | Description                                                                                                                                                                                                                                                              |
|--------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| gw_flavor_id       | String                                | <b>Definition:</b> Specifies the flavor ID of the gateway load balancer.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                                    |
| loadbalancer_type  | String                                | <b>Definition:</b> Specifies the load balancer type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>gateway:</b> gateway load balancers</li><li>• <b>null:</b> other types of load balancers</li></ul> This parameter is unsupported. Please do not use it. |
| publicips          | Array of <b>PublicIpInfo</b> objects  | <b>Definition:</b> Specifies the EIP bound to the load balancer.<br><b>NOTE</b><br>This parameter has the same meaning as <b>eips</b> .                                                                                                                                  |
| global_eips        | Array of <b>GlobalEipInfo</b> objects | <b>Definition:</b> Specifies the global EIP bound to the load balancer.                                                                                                                                                                                                  |
| elb_virsubnet_ids  | Array of strings                      | <b>Definition:</b> Specifies the network IDs of subnets on the downstream plane.<br><b>Range:</b> N/A                                                                                                                                                                    |
| elb_virsubnet_type | String                                | <b>Definition:</b> Specifies the type of the subnet on the downstream plane.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ipv4:</b> IPv4 subnets</li><li>• <b>dualstack:</b> subnets that support IPv4/IPv6 dual stack</li></ul>                          |

| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_target_enable           | Boolean | <p><b>Definition:</b> Specifies whether to add backend servers that are not in the load balancer's VPC.</p> <p>If you set it to <b>true</b>, you can associate servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using server IP addresses.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> |
| frozen_scene               | String  | <p><b>Definition:</b> Specifies the scenario where the load balancer is frozen.</p> <p>If there are multiple scenarios, separate them with commas (,).</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>ILLEGAL:</b> The load balancer is frozen due to violation of laws and regulations.</li><li>• <b>VERIFY:</b> Your account has not completed real-name authentication.</li><li>• <b>PARTNER:</b> The load balancer is frozen by the partner.</li><li>• <b>ARREAR:</b> The load balancer is frozen due to arrears.</li></ul>                         |
| deletion_protection_enable | Boolean | <p><b>Definition:</b> Specifies whether to enable deletion protection. This parameter is returned only when the deletion protection is enabled in the current region.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>false:</b> This option will be disabled.</li><li>• <b>true:</b> This option will be enabled.</li></ul>                                                                                                                                                                                                                             |

| Parameter           | Type                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| autoscaling         | <a href="#">AutoscalingRef</a> object | <b>Definition:</b> Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer flavors can be automatically adjusted based on incoming traffic.<br><b>NOTE</b><br>This parameter has been deprecated, but is retained for compatibility purposes. Using this parameter is not recommended. If this parameter is specified, the load balancer with minimum flavors will be created and you will be billed for the minimum flavors.            |
| public_border_group | String                                | <b>Definition:</b> Specifies the public border group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>center:</b> public border group of the central site</li><li>• Edge site name: public border group of an edge site</li></ul>                                                                                                                                                                                                                                  |
| charge_mode         | String                                | <b>Definition:</b> Specifies the charge mode of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>flavor:</b> billed by the fixed flavor you select.</li><li>• <b>lcu:</b> billed by how many LCUs you have used.</li><li>• <b>Null:</b> If it is a shared load balancer, it is free. If it is a dedicated load balancer, it will be billed by the fixed flavor you select.</li></ul> <p>This parameter is unsupported. Please do not use it.</p> |
| service_lb_mode     | String                                | <b>Definition:</b> Specifies load balancer mode.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>lb:</b> Cross-tenant access is not supported.</li><li>• <b>ep:</b> Cross-tenant access is supported.</li></ul> <p>This parameter is unsupported. Please do not use it.</p>                                                                                                                                                                                        |

| Parameter                 | Type                                                    | Description                                                                                                                                                                                                                                                 |
|---------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| instance_type             | String                                                  | <b>Definition:</b> Specifies the internal service to which the load balancer belongs.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                          |
| instance_id               | String                                                  | <b>Definition:</b> Specifies the ID of the instance with which the load balancer is associated.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                |
| proxy_protocol_extensions | Array of <a href="#">ProxyProtocolExtension</a> objects | <b>Definition:</b> Specifies the proxy protocol extension.<br>This parameter is unsupported. Please do not use it.                                                                                                                                          |
| waf_failure_action        | String                                                  | <b>Definition:</b> Specifies traffic distributing policies when the WAF is faulty.<br><b>Range:</b> <b>discard</b> indicates traffic will not be distributed. <b>forward</b> indicates traffic will be distributed to the default backend servers.          |
| protection_status         | String                                                  | <b>Definition:</b> Specifies the protection status.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul> |
| protection_reason         | String                                                  | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>).                                                                             |
| log_group_id              | String                                                  | <b>Definition:</b> Specifies the ID of the log group that is associated with the load balancer.<br><b>Range:</b> N/A                                                                                                                                        |
| log_topic_id              | String                                                  | <b>Definition:</b> Specifies the ID of the log topic that is associated with the load balancer.<br><b>Range:</b> N/A                                                                                                                                        |

| Parameter        | Type                                  | Description                                                                                                                         |
|------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| custom_qos_limit | <a href="#">CustomQosLimit</a> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors.<br>This parameter is unsupported. Please do not use it. |

**Table 5-79** PoolRef

| Parameter | Type   | Description                                                                    |
|-----------|--------|--------------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A |

**Table 5-80** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

**Table 5-81** Tag

| Parameter | Type   | Description                                                      |
|-----------|--------|------------------------------------------------------------------|
| key       | String | <b>Definition:</b> Specifies the tag key.<br><b>Range:</b> N/A   |
| value     | String | <b>Definition:</b> Specifies the tag value.<br><b>Range:</b> N/A |

**Table 5-82** EipInfo

| Parameter   | Type   | Description                                                   |
|-------------|--------|---------------------------------------------------------------|
| eip_id      | String | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A |
| eip_address | String | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A    |

| Parameter  | Type    | Description                                                                                                                                                           |
|------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_version | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

**Table 5-83** PublicIpInfo

| Parameter        | Type    | Description                                                                                                                                                       |
|------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| publicip_id      | String  | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A                                                                                                     |
| publicip_address | String  | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A                                                                                                        |
| ip_version       | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 address</li><li>• 6: IPv6 address</li></ul> |

**Table 5-84** GlobalEipInfo

| Parameter            | Type    | Description                                                                                                                                                           |
|----------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| global_eip_id        | String  | <b>Definition:</b> Specifies the ID of the global EIP.<br><b>Range:</b> N/A                                                                                           |
| global_eip_addresses | String  | <b>Definition:</b> Specifies the global EIP.<br><b>Range:</b> N/A                                                                                                     |
| ip_version           | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |



**Table 5-85** AutoscalingRef

| Parameter        | Type    | Description                                                                                                                                                                                                                                              |
|------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable           | Boolean | <b>Definition:</b> Specifies whether to enable elastic scaling for the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> |
| min_l7_flavor_id | String  | <b>Definition:</b> Specifies the ID of the minimum elastic flavor at Layer 7.<br><b>Range:</b> N/A                                                                                                                                                       |

**Table 5-86** ProxyProtocolExtension

| Parameter        | Type                    | Description                                                                                                                 |
|------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| vip_address      | String                  | <b>Definition:</b> Specifies the IPv4 address.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| ipv6_vip_address | String                  | <b>Definition:</b> Specifies the IPv6 address.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| extension        | <b>Extension</b> object | <b>Definition:</b> Specifies the proxy protocol extension.<br><b>Constraints:</b> N/A                                       |

**Table 5-87** Extension

| Parameter | Type   | Description                                                                                                                    |
|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------|
| ep_id     | String | <b>Definition:</b> Specifies the VPC endpoint ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter     | Type   | Description                                                                                                                            |
|---------------|--------|----------------------------------------------------------------------------------------------------------------------------------------|
| ep_service_id | String | <b>Definition:</b> Specifies the VPC endpoint service ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-88** CustomQosLimit

| Parameter | Type                  | Description                                                                            |
|-----------|-----------------------|----------------------------------------------------------------------------------------|
| l4        | <b>L4Limit</b> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors at Layer 4. |
| l7        | <b>L7Limit</b> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors at Layer 7. |

**Table 5-89** L4Limit

| Parameter  | Type    | Description                                                                                                |
|------------|---------|------------------------------------------------------------------------------------------------------------|
| connection | Integer | <b>Definition:</b> Specifies the maximum number of concurrent connections at Layer 4.<br><b>Range:</b> N/A |
| cps        | Integer | <b>Definition:</b> Specifies the maximum number of new connections at Layer 4.<br><b>Range:</b> N/A        |

**Table 5-90** L7Limit

| Parameter  | Type    | Description                                                                                                |
|------------|---------|------------------------------------------------------------------------------------------------------------|
| connection | Integer | <b>Definition:</b> Specifies the maximum number of concurrent connections at Layer 7.<br><b>Range:</b> N/A |
| cps        | Integer | <b>Definition:</b> Specifies the maximum number of new connections at Layer 7.<br><b>Range:</b> N/A        |

**Table 5-91** PageInfo

| Parameter       | Type    | Description                                                                                                                                                                                                                          |
|-----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String  | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |
| next_marker     | String  | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A                                                                  |
| current_count   | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A                                                                                                                                |

## Example Requests

- Querying load balancers on each page

```
GET https://{ELB_Endpoint}/v3/b2782e6708b8475c993e6064bc456bf8/elb/loadbalancers?limit=2&marker=87627cb6-9ff1-4580-984f-cc564fa9fc34
```

- Querying load balancers using multiple IDs

```
GET https://{ELB_Endpoint}/v3/b2782e6708b8475c993e6064bc456bf8/elb/loadbalancers?id=87627cb6-9ff1-4580-984f-cc564fa9fc34&id=09e86f09-03fc-440e-8132-03f3e149e979
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "request_id": "46b7d911-cece-408c-a2cc-55c78ab025d8",
 "loadbalancers": [{
 "id": "65672f7e-2024-4c39-9198-98249da479c5",
 "project_id": "057ef081eb00d2732fd1c01a9be75e6f",
 "name": "dxq_2021_07_26_11_12_37",
 "auto_terminate_time": "2021-07-26T03:18:37Z",
 "description": "",
 "vip_port_id": "b289f890-a6fa-4405-a9cc-fe62b8a3bed0",
 "vip_address": "172.16.0.152",
 "admin_state_up": true,
 "provisioning_status": "ACTIVE",
 "operating_status": "ONLINE",
 "listeners": [{
 "id": "dc9572eb-a5b2-47b3-a982-44892d833892"
 }],
 "pools": [{
 "id": "dc6b01c4-f704-4427-a4c2-21cd5f58d177"
 }],
 "tags": [],
 "provider": "vlb",
 "created_at": "2021-07-26T03:12:37Z",
```

```
"updated_at" : "2021-07-26T03:12:37Z",
"vpc_id" : "6e0ee31f-7a46-4530-b32f-ce41f30959d4",
"enterprise_project_id" : "0",
"availability_zone_list" : ["az1"],
"ipv6_vip_address" : "2001:db8:a583:4cb:d6b8:f8b4:4211:fe72",
"ipv6_vip_virsubnet_id" : "0b9e3c5e-3ec8-46b3-bab9-80b1450e59ee",
"ipv6_vip_port_id" : "5186bb47-24e5-4171-b795-62d22846db9b",
"publicips" : [],
"elb_virsubnet_ids" : ["0b9e3c5e-3ec8-46b3-bab9-80b1450e59ee"],
"elb_virsubnet_type" : "dualstack",
"ip_target_enable" : false,
"autoscaling" : {
 "enable" : false,
 "min_l7_flavor_id" : ""
},
"frozen_scene" : null,
"eips" : [],
"guaranteed" : true,
"billing_info" : null,
"l4_flavor_id" : "aa06b26b-9ff9-43c6-92b9-41e0f746bca6",
"l4_scale_flavor_id" : null,
"l7_flavor_id" : "e2a5675c-a181-444e-b9a5-17b052dc7fb9",
"l7_scale_flavor_id" : null,
"vip_subnet_cidr_id" : "96e52038-7983-462f-8a96-415d8a280b13",
"public_border_group" : "center",
"log_topic_id" : null,
"log_group_id" : null
}, {
 "id" : "cce5318e-c79a-4f68-94a2-9fb285c6efbe",
 "project_id" : "057ef081eb00d2732fd1c01a9be75e6f",
 "name" : "elb-reset",
 "auto_terminate_time" : "2021-07-26T03:18:37Z",
 "description" : "",
 "vip_port_id" : null,
 "vip_address" : null,
 "admin_state_up" : true,
 "provisioning_status" : "RECYCLING",
 "operating_status" : "ONLINE",
 "listeners" : [{
 "id" : "0ae21c37-8b90-4e73-8a35-ee6d6d2538c"
 }],
 "pools" : [{
 "id" : "904ecca6-8ebb-4974-9c5c-61d1d66fba17"
 }],
 "tags" : [],
 "provider" : "vlb",
 "created_at" : "2021-07-26T02:46:31Z",
 "updated_at" : "2021-07-26T02:46:59Z",
 "vpc_id" : "59cb11ef-f185-49ba-92af-0539e8ff9734",
 "enterprise_project_id" : "0",
 "availability_zone_list" : ["az1"],
 "ipv6_vip_address" : null,
 "ipv6_vip_virsubnet_id" : null,
 "ipv6_vip_port_id" : null,
 "publicips" : [{
 "publicip_id" : "0c07e04d-e2f9-41ad-b934-f58a65b6734d",
 "publicip_address" : "97.97.2.171",
 "ip_version" : 4
 }],
 "elb_virsubnet_ids" : ["7f817f9c-8731-4002-9e47-18cb8d431787"],
 "elb_virsubnet_type" : "dualstack",
 "ip_target_enable" : false,
 "autoscaling" : {
 "enable" : false,
 "min_l7_flavor_id" : ""
 },
 "frozen_scene" : null,
 "eips" : [{
 "eip_id" : "0c07e04d-e2f9-41ad-b934-f58a65b6734d",
```

```
"eip_address" : "97.97.2.171",
"ip_version" : 4
}],
"guaranteed" : true,
"billing_info" : null,
"l4_flavor_id" : "636ba721-935a-4ca5-a685-8076ce0e4148",
"l4_scale_flavor_id" : null,
"l7_flavor_id" : null,
"l7_scale_flavor_id" : null,
"vip_subnet_cidr_id" : null,
"public_border_group" : "center",
"log_topic_id" : null,
"log_group_id" : null
}],
"page_info" : {
 "next_marker" : "cce5318e-c79a-4f68-94a2-9fb285c6efbe",
 "previous_marker" : "65672f7e-2024-4c39-9198-98249da479c5",
 "current_count" : 2
}
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListLoadBalancersSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ListLoadBalancersRequest request = new ListLoadBalancersRequest();
 try {
 ListLoadBalancersResponse response = client.listLoadBalancers(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 }
 }
}
```

```
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ListLoadBalancersRequest()
 response = client.list_load_balancers(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"
```

```
auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.ListLoadBalancersRequest{}
response, err := client.ListLoadBalancers(request)
if err == nil {
 fmt.Printf("%v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.5 Viewing the Details of a Load Balancer

### Function

This API is used to view the details of a load balancer.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}

**Table 5-92** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                            |

## Request Parameters

**Table 5-93** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-94** Response body parameters

| Parameter  | Type   | Description                                                                                                                                                                          |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |



| Parameter    | Type                                | Description                                                  |
|--------------|-------------------------------------|--------------------------------------------------------------|
| loadbalancer | <a href="#">LoadBalancer</a> object | <b>Definition:</b> Provides details about the load balancer. |

**Table 5-95** LoadBalancer

| Parameter           | Type                                         | Description                                                                                                                                                                                                                                  |
|---------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                  | String                                       | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A                                                                                                                                                                      |
| description         | String                                       | <b>Definition:</b> Provides supplementary information about the load balancer.<br><b>Range:</b> N/A                                                                                                                                          |
| provisioning_status | String                                       | <b>Definition:</b> Specifies the provisioning status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ACTIVE:</b> in use</li><li>• <b>PENDING_DELETE:</b> deleting</li></ul>                                |
| admin_state_up      | Boolean                                      | <b>Definition:</b> Specifies whether the load balancer is enabled.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> enabled</li><li>• <b>false:</b> disabled</li></ul>                                                  |
| provider            | String                                       | <b>Definition:</b> Specifies the provider of the load balancer. The value is fixed to <b>vlb</b> .<br><b>Range:</b> N/A                                                                                                                      |
| pools               | Array of <a href="#">PoolRef</a> objects     | <b>Definition:</b> Lists the IDs of backend server groups associated with the load balancer.                                                                                                                                                 |
| listeners           | Array of <a href="#">ListenerRef</a> objects | <b>Definition:</b> Lists the IDs of listeners associated with the load balancer.                                                                                                                                                             |
| operating_status    | String                                       | <b>Definition:</b> Specifies the operating status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The load balancer is online.</li><li>• <b>FROZEN:</b> The load balancer is frozen.</li></ul> |

| Parameter          | Type                                 | Description                                                                                                                                                                                                                                                                               |
|--------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name               | String                               | <b>Definition:</b> Specifies the load balancer name.<br><b>Range:</b> N/A                                                                                                                                                                                                                 |
| project_id         | String                               | <b>Definition:</b> Specifies the ID of the project where the load balancer is used.<br><b>Range:</b> N/A                                                                                                                                                                                  |
| vip_subnet_cidr_id | String                               | <b>Definition:</b> Specifies the ID of the IPv4 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br><b>Range:</b> N/A                                                                                                                           |
| vip_address        | String                               | <b>Definition:</b> Specifies the private IPv4 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                                          |
| vip_port_id        | String                               | <b>Definition:</b> Specifies the ID of the port bound to the private IPv4 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                              |
| tags               | Array of <a href="#">Tag</a> objects | <b>Definition:</b> Specifies the tags added to the load balancer.                                                                                                                                                                                                                         |
| created_at         | String                               | <b>Definition:</b> Specifies the time when the load balancer was created.<br><b>Range:</b><br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                        |
| updated_at         | String                               | <b>Definition:</b> Specifies the time when the load balancer was updated.<br><b>Range:</b><br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                        |
| guaranteed         | Boolean                              | <b>Definition:</b> Specifies whether the load balancer is a dedicated load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>false:</b> The load balancer is a shared load balancer.</li><li>• <b>true:</b> The load balancer is a dedicated load balancer.</li></ul> |

| Parameter              | Type                                     | Description                                                                                                                                                                                                                                                                       |
|------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vpc_id                 | String                                   | <b>Definition:</b> Specifies the ID of the VPC where the load balancer is located.<br><b>Range:</b> N/A                                                                                                                                                                           |
| eips                   | Array of <a href="#">EipInfo</a> objects | <b>Definition:</b> Specifies the EIP bound to the load balancer.<br><b>NOTE</b><br>This parameter has the same meaning as <b>publicips</b> .                                                                                                                                      |
| ipv6_vip_address       | String                                   | <b>Definition:</b> Specifies the IPv6 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                                          |
| ipv6_vip_virsubnet_id  | String                                   | <b>Definition:</b> Specifies the ID of the IPv6 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br><b>Range:</b> N/A                                                                                                                   |
| ipv6_vip_port_id       | String                                   | <b>Definition:</b> Specifies the ID of the port bound to the IPv6 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                              |
| availability_zone_list | Array of strings                         | <b>Definition:</b> Specifies the list of AZs where the load balancers are created.<br><b>Range:</b> N/A                                                                                                                                                                           |
| enterprise_project_id  | String                                   | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |
| billing_info           | String                                   | <b>Definition:</b> Provides resource billing information.<br><b>Range:</b> <ul style="list-style-type: none"><li>• If the value is left blank, the resource is billed on a pay-per-use basis.</li></ul> This parameter is unsupported. Please do not use it.                      |

| Parameter          | Type                                          | Description                                                                                                                                                                                                                                                                                   |
|--------------------|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| l4_flavor_id       | String                                        | <p><b>Definition:</b> Specifies the ID of a flavor at Layer 4.</p> <p>If the current load balancer is an elastic flavor instance, this parameter defines the maximum elastic flavor at Layer 4.</p> <p><b>Range:</b> N/A</p>                                                                  |
| l4_scale_flavor_id | String                                        | <p><b>Definition:</b> Specifies the ID of an elastic flavor at Layer 4.</p> <p><b>Range:</b> N/A</p> <p><b>NOTE</b><br/>This parameter has been discarded. Do not use it.</p>                                                                                                                 |
| l7_flavor_id       | String                                        | <p><b>Definition:</b> Specifies the ID of a flavor at Layer 7.</p> <p>If the current load balancer is an elastic flavor instance, this parameter defines the maximum elastic flavor at Layer 7.</p> <p><b>Range:</b> N/A</p>                                                                  |
| l7_scale_flavor_id | String                                        | <p><b>Definition:</b> Specifies the ID of an elastic flavor at Layer 7.</p> <p><b>Range:</b> N/A</p> <p><b>NOTE</b><br/>This parameter has been discarded. Do not use it.</p>                                                                                                                 |
| gw_flavor_id       | String                                        | <p><b>Definition:</b> Specifies the flavor ID of the gateway load balancer.</p> <p><b>Range:</b> N/A</p> <p>This parameter is unsupported. Please do not use it.</p>                                                                                                                          |
| loadbalancer_type  | String                                        | <p><b>Definition:</b> Specifies the load balancer type.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>gateway:</b> gateway load balancers</li> <li>• <b>null:</b> other types of load balancers</li> </ul> <p>This parameter is unsupported. Please do not use it.</p> |
| publicips          | Array of <a href="#">PublicIpInfo</a> objects | <p><b>Definition:</b> Specifies the EIP bound to the load balancer.</p> <p><b>NOTE</b><br/>This parameter has the same meaning as <b>eips</b>.</p>                                                                                                                                            |

| Parameter          | Type                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------|------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| global_eips        | Array of <a href="#">GlobalEipInfo</a> objects | <b>Definition:</b> Specifies the global EIP bound to the load balancer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| elb_virsubnet_ids  | Array of strings                               | <b>Definition:</b> Specifies the network IDs of subnets on the downstream plane.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| elb_virsubnet_type | String                                         | <b>Definition:</b> Specifies the type of the subnet on the downstream plane.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ipv4:</b> IPv4 subnets</li><li>• <b>dualstack:</b> subnets that support IPv4/IPv6 dual stack</li></ul>                                                                                                                                                                                                                                                                                                                |
| ip_target_enable   | Boolean                                        | <b>Definition:</b> Specifies whether to add backend servers that are not in the load balancer's VPC.<br>If you set it to <b>true</b> , you can associate servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using server IP addresses.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> |
| frozen_scene       | String                                         | <b>Definition:</b> Specifies the scenario where the load balancer is frozen.<br>If there are multiple scenarios, separate them with commas (,).<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ILLEGAL:</b> The load balancer is frozen due to violation of laws and regulations.</li><li>• <b>VERIFY:</b> Your account has not completed real-name authentication.</li><li>• <b>PARTNER:</b> The load balancer is frozen by the partner.</li><li>• <b>ARREAR:</b> The load balancer is frozen due to arrears.</li></ul>                          |

| Parameter                  | Type                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| deletion_protection_enable | Boolean                               | <b>Definition:</b> Specifies whether to enable deletion protection. This parameter is returned only when the deletion protection is enabled in the current region.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>false:</b> This option will be disabled.</li><li>• <b>true:</b> This option will be enabled.</li></ul>                                                                                                                                          |
| autoscaling                | <a href="#">AutoscalingRef</a> object | <b>Definition:</b> Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer flavors can be automatically adjusted based on incoming traffic.<br><b>NOTE</b><br>This parameter has been deprecated, but is retained for compatibility purposes. Using this parameter is not recommended. If this parameter is specified, the load balancer with minimum flavors will be created and you will be billed for the minimum flavors.            |
| public_border_group        | String                                | <b>Definition:</b> Specifies the public border group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>center:</b> public border group of the central site</li><li>• Edge site name: public border group of an edge site</li></ul>                                                                                                                                                                                                                                  |
| charge_mode                | String                                | <b>Definition:</b> Specifies the charge mode of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>flavor:</b> billed by the fixed flavor you select.</li><li>• <b>lcu:</b> billed by how many LCUs you have used.</li><li>• <b>Null:</b> If it is a shared load balancer, it is free. If it is a dedicated load balancer, it will be billed by the fixed flavor you select.</li></ul> <p>This parameter is unsupported. Please do not use it.</p> |

| Parameter                 | Type                                                    | Description                                                                                                                                                                                                                                                                      |
|---------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| service_lb_mode           | String                                                  | <b>Definition:</b> Specifies load balancer mode.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>lb</b>: Cross-tenant access is not supported.</li><li>• <b>ep</b>: Cross-tenant access is supported.</li></ul> This parameter is unsupported. Please do not use it. |
| instance_type             | String                                                  | <b>Definition:</b> Specifies the internal service to which the load balancer belongs.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                               |
| instance_id               | String                                                  | <b>Definition:</b> Specifies the ID of the instance with which the load balancer is associated.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                     |
| proxy_protocol_extensions | Array of <a href="#">ProxyProtocolExtension</a> objects | <b>Definition:</b> Specifies the proxy protocol extension.<br>This parameter is unsupported. Please do not use it.                                                                                                                                                               |
| waf_failure_action        | String                                                  | <b>Definition:</b> Specifies traffic distributing policies when the WAF is faulty.<br><b>Range:</b> <b>discard</b> indicates traffic will not be distributed. <b>forward</b> indicates traffic will be distributed to the default backend servers.                               |
| protection_status         | String                                                  | <b>Definition:</b> Specifies the protection status.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection</b>: The resource is not protected.</li><li>• <b>consoleProtection</b>: Modification is not allowed on the console.</li></ul>                      |

| Parameter         | Type                  | Description                                                                                                                                                                     |
|-------------------|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_reason | String                | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>). |
| log_group_id      | String                | <b>Definition:</b> Specifies the ID of the log group that is associated with the load balancer.<br><b>Range:</b> N/A                                                            |
| log_topic_id      | String                | <b>Definition:</b> Specifies the ID of the log topic that is associated with the load balancer.<br><b>Range:</b> N/A                                                            |
| custom_qos_limit  | CustomQosLimit object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors.<br>This parameter is unsupported. Please do not use it.                                             |

**Table 5-96** PoolRef

| Parameter | Type   | Description                                                                    |
|-----------|--------|--------------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A |

**Table 5-97** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

**Table 5-98** Tag

| Parameter | Type   | Description                                                    |
|-----------|--------|----------------------------------------------------------------|
| key       | String | <b>Definition:</b> Specifies the tag key.<br><b>Range:</b> N/A |



| Parameter | Type   | Description                                                      |
|-----------|--------|------------------------------------------------------------------|
| value     | String | <b>Definition:</b> Specifies the tag value.<br><b>Range:</b> N/A |

**Table 5-99** EipInfo

| Parameter   | Type    | Description                                                                                                                                                           |
|-------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| eip_id      | String  | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A                                                                                                         |
| eip_address | String  | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A                                                                                                            |
| ip_version  | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

**Table 5-100** PublicIpInfo

| Parameter        | Type    | Description                                                                                                                                                       |
|------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| publicip_id      | String  | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A                                                                                                     |
| publicip_address | String  | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A                                                                                                        |
| ip_version       | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 address</li><li>• 6: IPv6 address</li></ul> |

**Table 5-101** GlobalEipInfo

| Parameter     | Type   | Description                                                                 |
|---------------|--------|-----------------------------------------------------------------------------|
| global_eip_id | String | <b>Definition:</b> Specifies the ID of the global EIP.<br><b>Range:</b> N/A |

| Parameter            | Type    | Description                                                                                                                                                           |
|----------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| global_eip_addresses | String  | <b>Definition:</b> Specifies the global EIP.<br><b>Range:</b> N/A                                                                                                     |
| ip_version           | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

**Table 5-102** AutoscalingRef

| Parameter        | Type    | Description                                                                                                                                                                                                                                              |
|------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable           | Boolean | <b>Definition:</b> Specifies whether to enable elastic scaling for the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> |
| min_l7_flavor_id | String  | <b>Definition:</b> Specifies the ID of the minimum elastic flavor at Layer 7.<br><b>Range:</b> N/A                                                                                                                                                       |

**Table 5-103** ProxyProtocolExtension

| Parameter        | Type                    | Description                                                                                                                 |
|------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| vip_address      | String                  | <b>Definition:</b> Specifies the IPv4 address.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| ipv6_vip_address | String                  | <b>Definition:</b> Specifies the IPv6 address.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| extension        | <b>Extension</b> object | <b>Definition:</b> Specifies the proxy protocol extension.<br><b>Constraints:</b> N/A                                       |

**Table 5-104** Extension

| Parameter     | Type   | Description                                                                                                                            |
|---------------|--------|----------------------------------------------------------------------------------------------------------------------------------------|
| ep_id         | String | <b>Definition:</b> Specifies the VPC endpoint ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A         |
| ep_service_id | String | <b>Definition:</b> Specifies the VPC endpoint service ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-105** CustomQoSLimit

| Parameter | Type                  | Description                                                                            |
|-----------|-----------------------|----------------------------------------------------------------------------------------|
| l4        | <b>L4Limit</b> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors at Layer 4. |
| l7        | <b>L7Limit</b> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors at Layer 7. |

**Table 5-106** L4Limit

| Parameter  | Type    | Description                                                                                                |
|------------|---------|------------------------------------------------------------------------------------------------------------|
| connection | Integer | <b>Definition:</b> Specifies the maximum number of concurrent connections at Layer 4.<br><b>Range:</b> N/A |
| cps        | Integer | <b>Definition:</b> Specifies the maximum number of new connections at Layer 4.<br><b>Range:</b> N/A        |

**Table 5-107** L7Limit

| Parameter  | Type    | Description                                                                                                |
|------------|---------|------------------------------------------------------------------------------------------------------------|
| connection | Integer | <b>Definition:</b> Specifies the maximum number of concurrent connections at Layer 7.<br><b>Range:</b> N/A |
| cps        | Integer | <b>Definition:</b> Specifies the maximum number of new connections at Layer 7.<br><b>Range:</b> N/A        |

## Example Requests

Querying the details of a given load balancer

```
GET https://{ELB_Endpoint}/v3/060576782980d5762f9ec014dd2f1148/elb/loadbalancers/3dbde7e5-c277-4ea3-a424-edd339357eff
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "loadbalancer" : {
 "id" : "3dbde7e5-c277-4ea3-a424-edd339357eff",
 "project_id" : "060576782980d5762f9ec014dd2f1148",
 "name" : "elb-l4-no-delete",
 "description" : null,
 "vip_port_id" : "f079c7ee-65a9-44ef-be86-53d8927e59be",
 "vip_address" : "10.0.0.196",
 "admin_state_up" : true,
 "provisioning_status" : "ACTIVE",
 "operating_status" : "ONLINE",
 "listeners" : [],
 "pools" : [{
 "id" : "1d864dc9-f6ef-4366-b59d-7034cde2328f"
 }, {
 "id" : "c0a2e4a1-c028-4a24-a62f-e721c52f5513"
 }, {
 "id" : "79308896-6169-4c28-acbc-e139eb661996"
 }],
 "tags" : [],
 "provider" : null,
 "created_at" : "2019-12-02T09:55:11Z",
 "updated_at" : "2019-12-02T09:55:11Z",
 "vpc_id" : "70711260-9de9-4d96-9839-0ae698e00109",
 "enterprise_project_id" : "0",
 "availability_zone_list" : [],
 "ipv6_vip_address" : null,
 "ipv6_vip_virsubnet_id" : null,
 "ipv6_vip_port_id" : null,
 "publicips" : [],
 "elb_virsubnet_ids" : ["ad5d63bf-3b50-4e88-b4d9-e94a59aade48"],
 "eips" : [],
 "guaranteed" : true,
 "billing_info" : null,
 "l4_flavor_id" : "e5acacda-f861-404e-9871-df480c49d185",
 "l4_scale_flavor_id" : null,
 }
}
```

```
"l7_flavor_id" : null,
"l7_scale_flavor_id" : null,
"vip_subnet_cidr_id" : "396d918a-756e-4163-8450-3bdc860109cf",
"deletion_protection_enable" : false,
"autoscaling" : {
 "enable" : true,
 "min_l7_flavor_id" : "0c8cf29d-51cb-4c1d-8e25-1c61cf5c2b00"
},
"public_border_group" : "center"
},
"request_id" : "1a47cfbf-969f-4e40-8c0e-c2e60b14bcac"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowLoadBalancerSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowLoadBalancerRequest request = new ShowLoadBalancerRequest();
 request.withLoadbalancerId("{loadbalancer_id}");
 try {
 ShowLoadBalancerResponse response = client.showLoadBalancer(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

```
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ShowLoadBalancerRequest()
 request.loadbalancer_id = "{loadbalancer_id}"
 response = client.show_load_balancer(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()
```

```
client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.ShowLoadBalancerRequest{}
request.LoadbalancerId = "{loadbalancer_id}"
response, err := client.ShowLoadBalancer(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.6 Updating a Load Balancer

### Function

This API is used to update a load balancer.

### Calling Method

For details, see [Calling APIs](#).

### URI

PUT /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}

**Table 5-108** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                            |
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-109** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-110** Request body parameters

| Parameter    | Mandatory | Type                                             | Description                                                                                          |
|--------------|-----------|--------------------------------------------------|------------------------------------------------------------------------------------------------------|
| loadbalancer | Yes       | <a href="#">UpdateLoadBalancerOptions</a> object | <b>Definition:</b> Specifies the parameters for updating a load balancer.<br><b>Constraints:</b> N/A |



Table 5-111 UpdateLoadBalancerOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                           |
|----------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name           | No        | String  | <b>Definition:</b> Specifies the load balancer name.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, including letters and more. It can be left blank.<br><b>Default value:</b> N/A                            |
| admin_state_up | No        | Boolean | <b>Definition:</b> Specifies whether the load balancer is enabled.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> enabled</li><li>• <b>false:</b> disabled</li></ul> <b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| description    | No        | String  | <b>Definition:</b> Provides supplementary information about the load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, including letters and more. It can be left blank.<br><b>Default value:</b> N/A  |

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipv6_vip_virsubnet_id | No        | String | <p><b>Definition:</b> Specifies the ID of the IPv6 subnet where the load balancer is located. This subnet is also called the frontend subnet.</p> <p>You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets).</p> <p>Updating <b>ipv6_vip_virsubnet_id</b> changes the IPv6 subnet where the load balancer is located, and new IPv6 addresses will be assigned to the load balancer. However, the IPv4 subnet will not change.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The subnet specified by <b>ipv6_vip_virsubnet_id</b> must be in the VPC specified by <b>vpc_id</b>, and this subnet must support IPv6.</li><li>• This parameter can be updated only when <b>guaranteed</b> is set to <b>true</b>.</li></ul> <p><b>Range:</b> The ID must be in UUID format and can contain up to 36 characters.</p> <p><b>Default value:</b> N/A</p> <p><b>NOTE</b></p> <p>If this parameter is set to <b>null</b>, the IPv6 addresses will be unbound from the load balancer. Do not specify this parameter if no IPv6 subnet needs to be changed.</p> |

| Parameter                       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>vip_subnet_cidr_id</code> | No        | String | <p><b>Definition:</b> Specifies the ID of the IPv4 subnet where the load balancer is located. This subnet is also called the frontend subnet.</p> <p>You can query parameter <b>neutron_subnet_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets).</p> <p>Updating <b>vip_subnet_cidr_id</b> changes the IPv4 subnet where the load balancer is located, and new IPv4 addresses will be assigned to the load balancer. However, the IPv6 subnet will not change.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>vip_address</b> is also specified, the IP address specified by <b>vip_address</b> must be in the subnet specified by <b>vip_subnet_cidr_id</b>.</li><li>• The subnet specified by <b>vip_subnet_cidr_id</b> must be in the VPC specified by <b>vpc_id</b>.</li><li>• This parameter can be updated only when <b>guaranteed</b> is set to <b>true</b>.</li></ul> <p><b>Range:</b> The ID must be in UUID format and can contain up to 36 characters.</p> <p><b>Default value:</b> N/A</p> <p><b>NOTE</b></p> <p>If this parameter is set to <b>null</b>, the IPv4 addresses will be unbound from the load balancer. Do not specify this parameter if no IPv4 subnet needs to be changed.</p> |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vip_address | No        | String | <p><b>Definition:</b> Specifies the private IPv4 address of the load balancer.</p> <p><b>Constraints:</b> The IP address must be from the IPv4 subnet where the load balancer resides and should not be occupied by other services.</p> <p><b>Range:</b> The IP address must be in [0-255].[0-255].[0-255].[0-255] format, for example, 192.168.1.1.</p> <p><b>Default value:</b> N/A</p> <p>Note: This parameter can be updated only when <b>guaranteed</b> is set to <b>true</b>.</p> |

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| l4_flavor_id | No        | String | <p><b>Definition:</b> Specifies the ID of a flavor at Layer 4.</p> <p>You can query parameter <b>id</b> in the response by calling the API (GET https://{ELB_Endpoint}/v3/{project_id}/elb/flavors?type=L4).</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter can be updated only when <b>guaranteed</b> is set to <b>true</b>.</li><li>• If you change the flavor, you can select a higher or lower one. If you select a lower one, part of persistent connections will be interrupted.</li><li>• If <b>autoscaling.enable</b> is set to <b>true</b>, changes to this parameter will not take effect.</li><li>• If the flavor type is <b>L4</b>, the load balancer uses the fixed flavors and will be billed by the flavor you select.</li><li>• If the flavor type is <b>L4_elastic_max</b>, the load balancer uses the elastic flavors and will be billed by how many LCUs you use.</li><li>• This parameter is not supported by gateway load balancers.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| l7_flavor_id | No        | String | <p><b>Definition:</b> Specifies the ID of a flavor at Layer 7.</p> <p>You can query parameter <b>id</b> in the response by calling the API (GET https://{ELB_Endpoint}/v3/{project_id}/elb/flavors?type=L7).</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter can be updated only when <b>guaranteed</b> is set to <b>true</b>.</li><li>• If you change the flavor, you can select a higher or lower one. If you select a lower one, part of persistent connections will be interrupted.</li><li>• If <b>autoscaling.enable</b> is set to <b>true</b>, changes to this parameter will not take effect.</li><li>• If the flavor type is <b>L7</b>, the load balancer uses the fixed flavors and will be billed by the flavor you select.</li><li>• If the flavor type is <b>L7_elastic_max</b>, the load balancer uses the elastic flavors and will be billed by how many LCUs you use.</li><li>• This parameter is not supported by gateway load balancers.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

| Parameter      | Mandatory | Type                                | Description                                                                                                                                                                                                                                                                                                                                                           |
|----------------|-----------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipv6_bandwidth | No        | <a href="#">BandwidthRef</a> object | <b>Definition:</b> Specifies the ID of the bandwidth.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is available only when you create or update a load balancer with a public address.</li><li>• If you bind a new EIP to the load balancer and specify a shared bandwidth, this EIP will be added to the shared bandwidth.</li></ul> |

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_target_enable | No        | Boolean | <p><b>Definition:</b> Specifies whether to add backend servers that are not in the load balancer's VPC.</p> <p>If you set it to <b>true</b>, you can associate servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using server IP addresses.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This function cannot be disabled once it is enabled.</li><li>• If you want to enable <b>IP as a Backend</b> for a load balancer in a shared VPC, ensure that a VPC peering connection has been created to connect the VPCs. Otherwise, the communication will fail.</li><li>• This function is supported only by dedicated load balancers.</li><li>• This function is not supported by gateway load balancers.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> <p><b>Default value:</b> N/A</p> |



| Parameter         | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| elb_virsubnet_ids | No        | Array of strings | <p><b>Definition:</b> Specifies the network IDs of subnets on the downstream plane.</p> <p>You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets).</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If the IDs of the subnets bound to the load balancer are specified in <b>elb_virsubnet_ids</b>, the subnets will still be bound to the load balancer.</li><li>• If the IDs of the subnets bound to the load balancer are not specified in <b>elb_virsubnet_ids</b>, the subnets will be unbound from the load balancers. Do not unbind the subnets that have been used by the load balancer. Otherwise, an error will be returned.</li><li>• If the IDs of the subnets are specified in <b>elb_virsubnet_ids</b>, but not on the downstream plane, a new load balancer will be bound to the downstream plane.</li><li>• All subnets specified by <b>elb_virsubnet_ids</b> must be in the VPC where the load balancer works.</li><li>• Edge subnets are not supported.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

| Parameter                  | Mandatory | Type                                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------|-----------|------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| deletion_protection_enable | No        | Boolean                                                    | <b>Definition:</b> Specifies whether to enable deletion protection.<br><b>Constraints:</b> Disable deletion protection or removal protection for your resources before deregistering your account.<br><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| prepaid_options            | No        | <a href="#">PrepaidUpdateOption</a> object                 | <b>Definition:</b> Specifies the prepaid billing configuration for updating a load balancer.<br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| autoscaling                | No        | <a href="#">UpdateLoadBalancerAutoScalingOption</a> object | <b>Definition:</b> Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer flavors can be automatically adjusted based on incoming traffic.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is only available for whitelisted users.</li><li>• If elastic scaling is enabled, <b>l4_flavor_id</b> indicates the ID of the maximum elastic flavor at Layer 4.<br/><b>l7_flavor_id</b> indicates the ID of the maximum elastic flavor at Layer 7.</li></ul> <b>NOTE</b><br>This parameter has been deprecated, but is retained for compatibility purposes. Using this parameter is not recommended. If this parameter is specified, the load balancer with minimum flavors will be created and you will be billed for the minimum flavors. |

| Parameter          | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| charge_mode        | No        | String | <b>Definition:</b> Specifies the charge mode of the load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>flavor:</b> billed by the fixed flavor you select.</li></ul> <b>Default value:</b> N/A                                                                                                                                              |
| waf_failure_action | No        | String | <b>Definition:</b> Specifies traffic distributing policies when the WAF is faulty.<br><b>Constraints:</b> This parameter takes effect only when WAF is enabled for the load balancer.<br><b>Range:</b> <b>discard</b> indicates traffic will not be distributed. <b>forward</b> indicates traffic will be distributed to the default backend servers.<br><b>Default value:</b> <b>forward</b> |
| protection_status  | No        | String | <b>Definition:</b> Specifies the protection status.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul> <b>Default value:</b> N/A                                                                              |
| protection_reason  | No        | String | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Constraints:</b> This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>).<br><b>Default value:</b> N/A                                                           |

| Parameter        | Mandatory | Type   | Description                                                                                                                                      |
|------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| ipv6_vip_address | No        | String | <b>Definition:</b> Specifies the IPv6 address of the load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-112** BandwidthRef

| Parameter | Mandatory | Type   | Description                                                  |
|-----------|-----------|--------|--------------------------------------------------------------|
| id        | Yes       | String | <b>Definition:</b> Specifies the ID of the shared bandwidth. |

**Table 5-113** PrepaidUpdateOption

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| auto_pay  | No        | Boolean | <b>Definition:</b> Specifies whether the payment will be automatically deducted from your account balance when an order is submitted.<br><b>Constraints:</b> If you use the automatic payment mode, only your account balance can be used. If you want to use a voucher, do not use the automatic payment mode, and select the voucher for the payment in the Billing Center.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The order will be automatically paid.</li><li>• <b>false:</b> The order will not be automatically paid.</li></ul> <b>Default value:</b> N/A |

| Parameter   | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| change_mode | No        | String  | <p><b>Definition:</b> Specifies the flavor change type.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>immediate:</b> The flavor change is applied immediately.</li> <li>• <b>delay:</b> The flavor change is applied after the current subscription period ends.</li> </ul> <p><b>Default value:</b> N/A</p>                                                                                                                                          |
| period_num  | No        | Integer | <p><b>Definition:</b> Specifies the number of subscription periods. The value varies with the operation policy.</p> <p><b>Constraints:</b> This parameter takes effect only when <b>change_mode</b> is set to <b>delay</b>.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• The value ranges from 1 to 9, if <b>period_type</b> is set to <b>month</b>.</li> <li>• The value ranges from 1 to 3, if <b>period_type</b> is set to <b>year</b>.</li> </ul> <p><b>Default value:</b> N/A</p> |
| period_type | No        | String  | <p><b>Definition:</b> Specifies the subscription period type.</p> <p><b>Constraints:</b> This parameter takes effect only when <b>change_mode</b> is set to <b>delay</b>.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>month:</b> monthly subscription</li> <li>• <b>year:</b> yearly subscription</li> </ul> <p><b>Default value:</b> N/A</p>                                                                                                                                      |

**Table 5-114** UpdateLoadbalancerAutoscalingOption

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                   |
|------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable           | Yes       | Boolean | <b>Definition:</b> Specifies whether to enable elastic scaling for the load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> <b>Default value:</b> N/A |
| min_l7_flavor_id | No        | String  | <b>Definition:</b> Specifies the ID of the minimum elastic flavor at Layer 7.<br><b>Constraints:</b> This parameter cannot be left blank if there are Layer 7 listeners.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                    |

## Response Parameters

**Status code:** 200

**Table 5-115** Response body parameters

| Parameter    | Type                       | Description                                                                                                                                                                          |
|--------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer | <b>LoadBalancer</b> object | <b>Definition:</b> Specifies the load balancer.                                                                                                                                      |
| request_id   | String                     | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-116** LoadBalancer

| Parameter           | Type                                         | Description                                                                                                                                                                                                                                  |
|---------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                  | String                                       | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A                                                                                                                                                                      |
| description         | String                                       | <b>Definition:</b> Provides supplementary information about the load balancer.<br><b>Range:</b> N/A                                                                                                                                          |
| provisioning_status | String                                       | <b>Definition:</b> Specifies the provisioning status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ACTIVE:</b> in use</li><li>• <b>PENDING_DELETE:</b> deleting</li></ul>                                |
| admin_state_up      | Boolean                                      | <b>Definition:</b> Specifies whether the load balancer is enabled.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> enabled</li><li>• <b>false:</b> disabled</li></ul>                                                  |
| provider            | String                                       | <b>Definition:</b> Specifies the provider of the load balancer. The value is fixed to <b>vlb</b> .<br><b>Range:</b> N/A                                                                                                                      |
| pools               | Array of <a href="#">PoolRef</a> objects     | <b>Definition:</b> Lists the IDs of backend server groups associated with the load balancer.                                                                                                                                                 |
| listeners           | Array of <a href="#">ListenerRef</a> objects | <b>Definition:</b> Lists the IDs of listeners associated with the load balancer.                                                                                                                                                             |
| operating_status    | String                                       | <b>Definition:</b> Specifies the operating status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The load balancer is online.</li><li>• <b>FROZEN:</b> The load balancer is frozen.</li></ul> |
| name                | String                                       | <b>Definition:</b> Specifies the load balancer name.<br><b>Range:</b> N/A                                                                                                                                                                    |

| Parameter          | Type                                 | Description                                                                                                                                                                                                                                                                               |
|--------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id         | String                               | <b>Definition:</b> Specifies the ID of the project where the load balancer is used.<br><b>Range:</b> N/A                                                                                                                                                                                  |
| vip_subnet_cidr_id | String                               | <b>Definition:</b> Specifies the ID of the IPv4 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br><b>Range:</b> N/A                                                                                                                           |
| vip_address        | String                               | <b>Definition:</b> Specifies the private IPv4 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                                          |
| vip_port_id        | String                               | <b>Definition:</b> Specifies the ID of the port bound to the private IPv4 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                              |
| tags               | Array of <a href="#">Tag</a> objects | <b>Definition:</b> Specifies the tags added to the load balancer.                                                                                                                                                                                                                         |
| created_at         | String                               | <b>Definition:</b> Specifies the time when the load balancer was created.<br><b>Range:</b><br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                        |
| updated_at         | String                               | <b>Definition:</b> Specifies the time when the load balancer was updated.<br><b>Range:</b><br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                        |
| guaranteed         | Boolean                              | <b>Definition:</b> Specifies whether the load balancer is a dedicated load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>false:</b> The load balancer is a shared load balancer.</li><li>• <b>true:</b> The load balancer is a dedicated load balancer.</li></ul> |
| vpc_id             | String                               | <b>Definition:</b> Specifies the ID of the VPC where the load balancer is located.<br><b>Range:</b> N/A                                                                                                                                                                                   |



| Parameter              | Type                                     | Description                                                                                                                                                                                                                                                                       |
|------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| eips                   | Array of <a href="#">EipInfo</a> objects | <b>Definition:</b> Specifies the EIP bound to the load balancer.<br><b>NOTE</b><br>This parameter has the same meaning as <b>publicips</b> .                                                                                                                                      |
| ipv6_vip_address       | String                                   | <b>Definition:</b> Specifies the IPv6 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                                          |
| ipv6_vip_virsubnet_id  | String                                   | <b>Definition:</b> Specifies the ID of the IPv6 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br><b>Range:</b> N/A                                                                                                                   |
| ipv6_vip_port_id       | String                                   | <b>Definition:</b> Specifies the ID of the port bound to the IPv6 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                              |
| availability_zone_list | Array of strings                         | <b>Definition:</b> Specifies the list of AZs where the load balancers are created.<br><b>Range:</b> N/A                                                                                                                                                                           |
| enterprise_project_id  | String                                   | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |
| billing_info           | String                                   | <b>Definition:</b> Provides resource billing information.<br><b>Range:</b> <ul style="list-style-type: none"><li>• If the value is left blank, the resource is billed on a pay-per-use basis.</li></ul> This parameter is unsupported. Please do not use it.                      |
| l4_flavor_id           | String                                   | <b>Definition:</b> Specifies the ID of a flavor at Layer 4.<br>If the current load balancer is an elastic flavor instance, this parameter defines the maximum elastic flavor at Layer 4.<br><b>Range:</b> N/A                                                                     |

| Parameter          | Type                                           | Description                                                                                                                                                                                                                                                              |
|--------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| l4_scale_flavor_id | String                                         | <b>Definition:</b> Specifies the ID of an elastic flavor at Layer 4.<br><b>Range:</b> N/A<br><b>NOTE</b><br>This parameter has been discarded. Do not use it.                                                                                                            |
| l7_flavor_id       | String                                         | <b>Definition:</b> Specifies the ID of a flavor at Layer 7.<br>If the current load balancer is an elastic flavor instance, this parameter defines the maximum elastic flavor at Layer 7.<br><b>Range:</b> N/A                                                            |
| l7_scale_flavor_id | String                                         | <b>Definition:</b> Specifies the ID of an elastic flavor at Layer 7.<br><b>Range:</b> N/A<br><b>NOTE</b><br>This parameter has been discarded. Do not use it.                                                                                                            |
| gw_flavor_id       | String                                         | <b>Definition:</b> Specifies the flavor ID of the gateway load balancer.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                                    |
| loadbalancer_type  | String                                         | <b>Definition:</b> Specifies the load balancer type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>gateway:</b> gateway load balancers</li><li>• <b>null:</b> other types of load balancers</li></ul> This parameter is unsupported. Please do not use it. |
| publicips          | Array of <a href="#">PublicIpInfo</a> objects  | <b>Definition:</b> Specifies the EIP bound to the load balancer.<br><b>NOTE</b><br>This parameter has the same meaning as <b>eips</b> .                                                                                                                                  |
| global_eips        | Array of <a href="#">GlobalEipInfo</a> objects | <b>Definition:</b> Specifies the global EIP bound to the load balancer.                                                                                                                                                                                                  |
| elb_virsubnet_ids  | Array of strings                               | <b>Definition:</b> Specifies the network IDs of subnets on the downstream plane.<br><b>Range:</b> N/A                                                                                                                                                                    |

| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| elb_virsubnet_type         | String  | <p><b>Definition:</b> Specifies the type of the subnet on the downstream plane.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>ipv4:</b> IPv4 subnets</li> <li>• <b>dualstack:</b> subnets that support IPv4/IPv6 dual stack</li> </ul>                                                                                                                                                                                                                                                                                                                   |
| ip_target_enable           | Boolean | <p><b>Definition:</b> Specifies whether to add backend servers that are not in the load balancer's VPC.</p> <p>If you set it to <b>true</b>, you can associate servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using server IP addresses.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>true:</b> This option will be enabled.</li> <li>• <b>false:</b> This option will be disabled.</li> </ul> |
| frozen_scene               | String  | <p><b>Definition:</b> Specifies the scenario where the load balancer is frozen.</p> <p>If there are multiple scenarios, separate them with commas (,).</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>ILLEGAL:</b> The load balancer is frozen due to violation of laws and regulations.</li> <li>• <b>VERIFY:</b> Your account has not completed real-name authentication.</li> <li>• <b>PARTNER:</b> The load balancer is frozen by the partner.</li> <li>• <b>ARREAR:</b> The load balancer is frozen due to arrears.</li> </ul>                       |
| deletion_protection_enable | Boolean | <p><b>Definition:</b> Specifies whether to enable deletion protection. This parameter is returned only when the deletion protection is enabled in the current region.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>false:</b> This option will be disabled.</li> <li>• <b>true:</b> This option will be enabled.</li> </ul>                                                                                                                                                                                                                             |

| Parameter           | Type                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| autoscaling         | <a href="#">AutoscalingRef</a> object | <b>Definition:</b> Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer flavors can be automatically adjusted based on incoming traffic.<br><b>NOTE</b><br>This parameter has been deprecated, but is retained for compatibility purposes. Using this parameter is not recommended. If this parameter is specified, the load balancer with minimum flavors will be created and you will be billed for the minimum flavors.            |
| public_border_group | String                                | <b>Definition:</b> Specifies the public border group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>center:</b> public border group of the central site</li><li>• Edge site name: public border group of an edge site</li></ul>                                                                                                                                                                                                                                  |
| charge_mode         | String                                | <b>Definition:</b> Specifies the charge mode of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>flavor:</b> billed by the fixed flavor you select.</li><li>• <b>lcu:</b> billed by how many LCUs you have used.</li><li>• <b>Null:</b> If it is a shared load balancer, it is free. If it is a dedicated load balancer, it will be billed by the fixed flavor you select.</li></ul> <p>This parameter is unsupported. Please do not use it.</p> |
| service_lb_mode     | String                                | <b>Definition:</b> Specifies load balancer mode.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>lb:</b> Cross-tenant access is not supported.</li><li>• <b>ep:</b> Cross-tenant access is supported.</li></ul> <p>This parameter is unsupported. Please do not use it.</p>                                                                                                                                                                                        |

| Parameter                 | Type                                                    | Description                                                                                                                                                                                                                                                |
|---------------------------|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| instance_type             | String                                                  | <b>Definition:</b> Specifies the internal service to which the load balancer belongs.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                         |
| instance_id               | String                                                  | <b>Definition:</b> Specifies the ID of the instance with which the load balancer is associated.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                               |
| proxy_protocol_extensions | Array of <a href="#">ProxyProtocolExtension</a> objects | <b>Definition:</b> Specifies the proxy protocol extension.<br>This parameter is unsupported. Please do not use it.                                                                                                                                         |
| waf_failure_action        | String                                                  | <b>Definition:</b> Specifies traffic distributing policies when the WAF is faulty.<br><b>Range:</b> <b>discard</b> indicates traffic will not be distributed. <b>forward</b> indicates traffic will be distributed to the default backend servers.         |
| protection_status         | String                                                  | <b>Definition:</b> Specifies the protection status.<br><b>Range:</b> <ul style="list-style-type: none"> <li><b>nonProtection:</b> The resource is not protected.</li> <li><b>consoleProtection:</b> Modification is not allowed on the console.</li> </ul> |
| protection_reason         | String                                                  | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>).                                                                            |
| log_group_id              | String                                                  | <b>Definition:</b> Specifies the ID of the log group that is associated with the load balancer.<br><b>Range:</b> N/A                                                                                                                                       |
| log_topic_id              | String                                                  | <b>Definition:</b> Specifies the ID of the log topic that is associated with the load balancer.<br><b>Range:</b> N/A                                                                                                                                       |

| Parameter        | Type                                  | Description                                                                                                                         |
|------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| custom_qos_limit | <a href="#">CustomQosLimit</a> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors.<br>This parameter is unsupported. Please do not use it. |

**Table 5-117** PoolRef

| Parameter | Type   | Description                                                                    |
|-----------|--------|--------------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A |

**Table 5-118** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

**Table 5-119** Tag

| Parameter | Type   | Description                                                      |
|-----------|--------|------------------------------------------------------------------|
| key       | String | <b>Definition:</b> Specifies the tag key.<br><b>Range:</b> N/A   |
| value     | String | <b>Definition:</b> Specifies the tag value.<br><b>Range:</b> N/A |

**Table 5-120** EipInfo

| Parameter   | Type   | Description                                                   |
|-------------|--------|---------------------------------------------------------------|
| eip_id      | String | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A |
| eip_address | String | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A    |

| Parameter  | Type    | Description                                                                                                                                                           |
|------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_version | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

**Table 5-121** PublicIpInfo

| Parameter        | Type    | Description                                                                                                                                                       |
|------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| publicip_id      | String  | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A                                                                                                     |
| publicip_address | String  | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A                                                                                                        |
| ip_version       | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 address</li><li>• 6: IPv6 address</li></ul> |

**Table 5-122** GlobalEipInfo

| Parameter            | Type    | Description                                                                                                                                                           |
|----------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| global_eip_id        | String  | <b>Definition:</b> Specifies the ID of the global EIP.<br><b>Range:</b> N/A                                                                                           |
| global_eip_addresses | String  | <b>Definition:</b> Specifies the global EIP.<br><b>Range:</b> N/A                                                                                                     |
| ip_version           | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

**Table 5-123** AutoscalingRef

| Parameter        | Type    | Description                                                                                                                                                                                                                                              |
|------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable           | Boolean | <b>Definition:</b> Specifies whether to enable elastic scaling for the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> |
| min_l7_flavor_id | String  | <b>Definition:</b> Specifies the ID of the minimum elastic flavor at Layer 7.<br><b>Range:</b> N/A                                                                                                                                                       |

**Table 5-124** ProxyProtocolExtension

| Parameter        | Type                    | Description                                                                                                                 |
|------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| vip_address      | String                  | <b>Definition:</b> Specifies the IPv4 address.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| ipv6_vip_address | String                  | <b>Definition:</b> Specifies the IPv6 address.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| extension        | <b>Extension</b> object | <b>Definition:</b> Specifies the proxy protocol extension.<br><b>Constraints:</b> N/A                                       |

**Table 5-125** Extension

| Parameter | Type   | Description                                                                                                                    |
|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------|
| ep_id     | String | <b>Definition:</b> Specifies the VPC endpoint ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |



| Parameter     | Type   | Description                                                                                                                            |
|---------------|--------|----------------------------------------------------------------------------------------------------------------------------------------|
| ep_service_id | String | <b>Definition:</b> Specifies the VPC endpoint service ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-126** CustomQosLimit

| Parameter | Type                  | Description                                                                            |
|-----------|-----------------------|----------------------------------------------------------------------------------------|
| l4        | <b>L4Limit</b> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors at Layer 4. |
| l7        | <b>L7Limit</b> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors at Layer 7. |

**Table 5-127** L4Limit

| Parameter  | Type    | Description                                                                                                |
|------------|---------|------------------------------------------------------------------------------------------------------------|
| connection | Integer | <b>Definition:</b> Specifies the maximum number of concurrent connections at Layer 4.<br><b>Range:</b> N/A |
| cps        | Integer | <b>Definition:</b> Specifies the maximum number of new connections at Layer 4.<br><b>Range:</b> N/A        |

**Table 5-128** L7Limit

| Parameter  | Type    | Description                                                                                                |
|------------|---------|------------------------------------------------------------------------------------------------------------|
| connection | Integer | <b>Definition:</b> Specifies the maximum number of concurrent connections at Layer 7.<br><b>Range:</b> N/A |
| cps        | Integer | <b>Definition:</b> Specifies the maximum number of new connections at Layer 7.<br><b>Range:</b> N/A        |

## Example Requests

Modifying the description and name of a load balancer

```
PUT https://{ELB_Endpoint}/v3/{project_id}/elb/loadbalancers/{loadbalancer_id}

{
 "loadbalancer": {
 "description": "loadbalancer",
 "name": "loadbalancer-update"
 }
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "request_id": "010dad1e-32a3-4405-ab83-62a1fc5f8722",
 "loadbalancer": {
 "id": "2e073bf8-edfe-4e51-a699-d915b0b8af89",
 "project_id": "b2782e6708b8475c993e6064bc456bf8",
 "name": "loadbalancer-update",
 "description": "loadbalancer",
 "vip_port_id": null,
 "vip_address": null,
 "admin_state_up": true,
 "provisioning_status": "ACTIVE",
 "operating_status": "ONLINE",
 "listeners": [{
 "id": "41937176-bf64-4b58-8e0d-9ff2d0d32c54"
 }, {
 "id": "abc6ac93-ad0e-4765-bd5a-eec632efde56"
 }, {
 "id": "b9d8ba97-6d60-467d-838d-f3550b54c22a"
 }, {
 "id": "fd797ebd-263d-4b18-96e9-e9188d36c69e"
 }],
 "pools": [{
 "id": "0aabcaa8-c35c-4ddc-a60c-9032d0ac0b80"
 }, {
 "id": "165d9092-396e-4a8d-b398-067496a447d2"
 }],
 "tags": [],
 "provider": "vlb",
 "created_at": "2019-04-20T03:10:37Z",
 "updated_at": "2019-05-24T02:11:58Z",
 "vpc_id": "2037c5bb-e04b-4de2-9300-9051af18e417",
 "enterprise_project_id": "0",
 "availability_zone_list": ["AZ1", "AZ2", "dc3"],
 "ipv6_vip_address": null,
 "ipv6_vip_virsubnet_id": null,
 "ipv6_vip_port_id": null,
 "eips": [],
 "guaranteed": true,
 "billing_info": null,
 "l4_flavor_id": null,
 "l4_scale_flavor_id": null,
 "l7_flavor_id": null,
 "l7_scale_flavor_id": null,
 "vip_subnet_cidr_id": null,
 "deletion_protection_enable": false,
 "public_border_group": "center"
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Modifying the description and name of a load balancer

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class UpdateLoadBalancerSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();

 UpdateLoadBalancerRequest request = new UpdateLoadBalancerRequest();
 request.withLoadbalancerId("{loadbalancer_id}");
 UpdateLoadBalancerRequestBody body = new UpdateLoadBalancerRequestBody();
 UpdateLoadBalancerOption loadbalancerbody = new UpdateLoadBalancerOption();
 loadbalancerbody.withName("loadbalancer-update")
 .withDescription("loadbalancer");
 body.withLoadbalancer(loadbalancerbody);
 request.withBody(body);
 try {
 UpdateLoadBalancerResponse response = client.updateLoadBalancer(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

### Modifying the description and name of a load balancer

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskgelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskgelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = UpdateLoadBalancerRequest()
 request.loadbalancer_id = "{loadbalancer_id}"
 loadbalancerbody = UpdateLoadBalancerOption(
 name="loadbalancer-update",
 description="loadbalancer"
)
 request.body = UpdateLoadBalancerRequestBody(
 loadbalancer=loadbalancerbody
)
 response = client.update_load_balancer(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Modifying the description and name of a load balancer

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
```

```
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.UpdateLoadBalancerRequest{}
request.LoadbalancerId = "{loadbalancer_id}"
nameLoadbalancer:= "loadbalancer-update"
descriptionLoadbalancer:= "loadbalancer"
loadbalancerbody := &model.UpdateLoadBalancerOption{
 Name: &nameLoadbalancer,
 Description: &descriptionLoadbalancer,
}
request.Body = &model.UpdateLoadBalancerRequestBody{
 Loadbalancer: loadbalancerbody,
}
response, err := client.UpdateLoadBalancer(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.7 Deleting a Load Balancer

### Function

This API is used to delete a load balancer.

## Constraints

All listeners added to the load balancer must be deleted before the load balancer is deleted.

## Calling Method

For details, see [Calling APIs](#).

## URI

DELETE /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}

**Table 5-129** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                            |

## Request Parameters

**Table 5-130** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 204**

Successful request.

None

## Example Requests

Deleting a load balancer

```
DELETE https://{ELB_Endpoint}/v3/060576782980d5762f9ec014dd2f1148/elb/loadbalancers/
32c1057f-74a1-42d6-9b20-d55b80ab89c4
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeleteLoadBalancerSolution {
 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 DeleteLoadBalancerRequest request = new DeleteLoadBalancerRequest();
 request.withLoadbalancerId("{loadbalancer_id}");
 try {
 DeleteLoadBalancerResponse response = client.deleteLoadBalancer(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
```

```
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskgelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskgelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeleteLoadBalancerRequest()
 request.loadbalancer_id = "{loadbalancer_id}"
 response = client.delete_load_balancer(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
```



```
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.DeleteLoadBalancerRequest{}
request.LoadbalancerId = "{loadbalancer_id}"
response, err := client.DeleteLoadBalancer(request)
if err == nil {
 fmt.Printf("%v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.8 Deleting a Load Balancer and Its Associated Resources

### Function

This API is used to delete a load balancer and its associated resources, including the listeners, backend server groups, and backend servers.

Note:

- If a load balancer has EIPs bound to it, the EIPs will be unbound from the load balancer.
- If deletion protection is enabled for the load balancer, the load balancer and its associated resources cannot be deleted.
- If deletion protection is enabled for any backend server group of the load balancer, the load balancer and its associated resources cannot be deleted.

- If modification protection is enabled for the load balancer, the load balancer and its associated resources can be deleted.
- Backend server groups are either disassociated from the load balancer if they are associated with other load balancers or deleted if they are not associated with other load balancers.
- When shared load balancers are deleted, their backend server groups will only be deleted.

## Calling Method

For details, see [Calling APIs](#).

## URI

DELETE /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/force-elb

**Table 5-131** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                            |

## Request Parameters

**Table 5-132** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 204**

Successful request.

None

## Example Requests

Deleting a load balancer and resources associated with it

```
DELETE https://{ELB_Endpoint}/v3/060576782980d5762f9ec014dd2f1148/elb/loadbalancers/
32c1057f-74a1-42d6-9b20-d55b80ab89c4/force-elb
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeleteLoadBalancerForceSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
```

```
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
DeleteLoadBalancerForceRequest request = new DeleteLoadBalancerForceRequest();
request.withLoadbalancerId("{loadbalancer_id}");
try {
 DeleteLoadBalancerForceResponse response = client.deleteLoadBalancerForce(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeleteLoadBalancerForceRequest()
 request.loadbalancer_id = "{loadbalancer_id}"
 response = client.delete_load_balancer_force(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.DeleteLoadBalancerForceRequest{}
 request.LoadbalancerId = "{loadbalancer_id}"
 response, err := client.DeleteLoadBalancerForce(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.9 Deleting a Load Balancer and Its Associated Resources (Including EIPs)

### Function

This API is used to delete a load balancer and its associated resources, including the listeners, backend server groups, backend servers, and EIPs.

Note: Backend server groups are either disassociated from the load balancer if they are associated with other load balancers or deleted if they are not associated with other load balancers.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/delete-cascade

**Table 5-133** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                            |

## Request Parameters

**Table 5-134** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-135** Request body parameters

| Parameter    | Mandatory | Type                                                           | Description                                                                                                                       |
|--------------|-----------|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer | Yes       | <a href="#">DeleteLoadBalancerCasca<br/>deOption</a><br>object | <b>Definition:</b> Specifies the parameters for deleting a load balancer and its associated resources.<br><b>Constraints:</b> N/A |

**Table 5-136** DeleteLoadBalancerCascadeOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| unbounded_pool | No        | Boolean | <b>Definition:</b> Specifies whether to delete the associated backend server group.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>For shared load balancers, the parameter can only be set to <b>true</b>.</li><li>If this backend server group is associated with other load balancers, the backend server group will not be deleted even if this parameter is set to <b>true</b>.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li><b>true:</b> The backend server group will be deleted.</li><li><b>false:</b> The backend server group will be disassociated from the load balancer but not deleted.</li></ul> <b>Default value:</b> <b>true</b> |
| public_ip      | No        | Boolean | <b>Definition:</b> Specifies whether to release EIPs after the load balancer is deleted.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li><b>true:</b> The EIPs will be released.</li><li><b>false:</b> The EIPs will be unbound from the load balancer but not released.</li></ul> <b>Default value:</b> <b>false</b>                                                                                                                                                                                                                                                                                                                          |

## Response Parameters

**Status code:** 204

Successful request.

None

## Example Requests

Deleting a load balancer and its associated resources (including EIPs)



```
POST https://{ELB_Endpoint}/v3/060576782980d5762f9ec014dd2f1148/elb/loadbalancers/
32c1057f-74a1-42d6-9b20-d55b80ab89c4/delete-cascade

{
 "loadbalancer" : {
 "unbounded_pool" : true,
 "public_ip" : true
 }
}
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

Deleting a load balancer and its associated resources (including EIPs)

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeleteLoadBalancerCascadeSolution {
 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();

 DeleteLoadBalancerCascadeRequest request = new DeleteLoadBalancerCascadeRequest();
 request.withLoadbalancerId("{loadbalancer_id}");
 DeleteLoadBalancerCascadeRequestBody body = new DeleteLoadBalancerCascadeRequestBody();
 DeleteLoadBalancerCascadeOption loadbalancerbody = new DeleteLoadBalancerCascadeOption();
 loadbalancerbody.withUnboundedPool(true)
 .withPublicIp(true);
 body.withLoadbalancer(loadbalancerbody);
 request.withBody(body);
 try {
 DeleteLoadBalancerCascadeResponse response = client.deleteLoadBalancerCascade(request);
 System.out.println(response.toString());
 }
 }
}
```

```
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

## Python

### Deleting a load balancer and its associated resources (including EIPs)

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeleteLoadBalancerCascadeRequest()
 request.loadbalancer_id = "{loadbalancer_id}"
 loadbalancerbody = DeleteLoadBalancerCascadeOption(
 unbounded_pool=True,
 public_ip=True
)
 request.body = DeleteLoadBalancerCascadeRequestBody(
 loadbalancer=loadbalancerbody
)
 response = client.delete_load_balancer_cascade(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Deleting a load balancer and its associated resources (including EIPs)

```
package main

import (
```

```
"fmt"
"github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
"github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.DeleteLoadBalancerCascadeRequest{}
 request.LoadbalancerId = "{loadbalancer_id}"
 unboundedPoolLoadbalancer:= true
 publicIpLoadbalancer:= true
 loadbalancerbody := &model.DeleteLoadBalancerCascadeOption{
 UnboundedPool: &unboundedPoolLoadbalancer,
 PublicIp: &publicIpLoadbalancer,
 }
 request.Body = &model.DeleteLoadBalancerCascadeRequestBody{
 Loadbalancer: loadbalancerbody,
 }
 response, err := client.DeleteLoadBalancerCascade(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.10 Batch Deleting Load Balancers

### Function

This API is used to batch delete load balancers.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/loadbalancers/batch-delete

**Table 5-137** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

### Request Parameters

**Table 5-138** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-139** Request body parameters

| Parameter        | Mandatory | Type             | Description                                                                                                 |
|------------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------|
| unbounded_pool   | No        | Boolean          | Specifies whether to delete the backend server groups after they are disassociated from the load balancers. |
| public_ip        | No        | Boolean          | Specifies whether to release the EIPs.                                                                      |
| loadbalancer_ids | Yes       | Array of strings | Specifies the IDs of the load balancers to be deleted.                                                      |

## Response Parameters

**Status code: 202**

**Table 5-140** Response body parameters

| Parameter        | Type             | Description                                            |
|------------------|------------------|--------------------------------------------------------|
| job_id           | String           | Specifies the ID of the batch deletion task.           |
| loadbalancer_ids | Array of strings | Specifies the IDs of the load balancers to be deleted. |

## Example Requests

Batch deleting load balancers

```
POST https://{ELB_Endpoint}/v3/{project_id}/elb/loadbalancers/batch-delete
```

```
{
 "public_ip" : true,
 "unbounded_pool" : true,
 "loadbalancer_ids" : ["5b2513ca-3290-46ad-b723-e47afb83b4d2",
 "c2d6bfd6-4eae-4995-8e5d-711fa592744c"]
}
```

## Example Responses

**Status code: 202**

Successful request.

```
{
 "job_id" : "6b76f5cb-cab8-48e2-919a-0ff55d230051",
 "loadbalancer_ids" : ["5b2513ca-3290-46ad-b723-e47afb83b4d2",
 "c2d6bfd6-4eae-4995-8e5d-711fa592744c"],
 "request_id" : "8812a7b1-4201-45e9-8346-f12bf9a78f04"
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 202         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.11 Querying the Status Tree of a Load Balancer

### Function

This API is used to query the status tree of a load balancer and to show information about all resources associated with the load balancer.

When **admin\_state\_up** is set to **false** and **operating\_status** to **OFFLINE** for a backend server, **DISABLE** is returned for **operating\_status** of the backend server in the response of this API.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/statuses

**Table 5-141** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

| Parameter       | Mandatory | Type   | Description                                                                                                                     |
|-----------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-142** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 200**

**Table 5-143** Response body parameters

| Parameter  | Type                                            | Description                                                                                                                                                                          |
|------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| statuses   | <a href="#">LoadBalancerStatusResult</a> object | <b>Definition:</b> Provides supplementary information about the load balancer status tree.<br><b>Default value:</b> N/A                                                              |
| request_id | String                                          | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-144** LoadBalancerStatusResult

| Parameter    | Type                                      | Description                                                                                  |
|--------------|-------------------------------------------|----------------------------------------------------------------------------------------------|
| loadbalancer | <a href="#">LoadBalancerStatus</a> object | <b>Definition:</b> Specifies the statuses of the load balancer and its associated resources. |

**Table 5-145** LoadBalancerStatus

| Parameter             | Type                                                        | Description                                                                                                                                                                                                   |
|-----------------------|-------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name                  | String                                                      | <b>Definition:</b> Specifies the load balancer name.<br><b>Range:</b> N/A                                                                                                                                     |
| provisioning_statuses | String                                                      | <b>Definition:</b> Specifies the provisioning status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ACTIVE:</b> in use</li><li>• <b>PENDING_DELETE:</b> deleting</li></ul> |
| listeners             | Array of <a href="#">LoadBalancerStatusListener</a> objects | <b>Definition:</b> Lists the listeners added to the load balancer.                                                                                                                                            |
| pools                 | Array of <a href="#">LoadBalancerStatusPool</a> objects     | <b>Definition:</b> Lists the backend server groups associated with the load balancer.                                                                                                                         |
| id                    | String                                                      | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A                                                                                                                                       |



| Parameter        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String | <b>Definition:</b> Specifies the operating status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The load balancer is running normally.</li><li>• <b>FROZEN:</b> The load balancer is frozen.</li><li>• <b>DEGRADED:</b> This status is displayed only when <b>operating_status</b> is set to <b>OFFLINE</b> for a backend server associated with the load balancer.</li><li>• <b>DISABLED:</b> This status is displayed only when <b>admin_state_up</b> of the load balancer is set to <b>false</b>.</li></ul> <b>NOTE</b><br><b>DEGRADED</b> and <b>DISABLED</b> are returned only when the API for querying the load balancer status tree is called. |

**Table 5-146** LoadBalancerStatusListener

| Parameter           | Type                                             | Description                                                                                                                                                    |
|---------------------|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name                | String                                           | <b>Definition:</b> Specifies the name of the listener.<br><b>Range:</b> N/A                                                                                    |
| provisioning_status | String                                           | <b>Definition:</b> Specifies the provisioning status of the listener.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ACTIVE:</b> in use</li></ul> |
| pools               | Array of <b>LoadBalancerStatusPool</b> objects   | <b>Definition:</b> Specifies the operating status of the backend server groups associated with the listener.                                                   |
| l7policies          | Array of <b>LoadBalancerStatusPolicy</b> objects | <b>Definition:</b> Specifies the operating status of the forwarding policy added to the listener.                                                              |
| id                  | String                                           | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A                                                                                             |

| Parameter        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String | <p><b>Definition:</b> Specifies the operating status of the listener.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>ONLINE</b> (default): The listener is running normally.</li><li>• <b>DEGRADED</b>: This status is displayed only when <b>provisioning_status</b> of a forwarding policy or a forwarding rule added to the listener is set to <b>ERROR</b> or <b>operating_status</b> is set to <b>OFFLINE</b> for a backend server associated with the listener.</li><li>• <b>DISABLED</b>: This status is displayed only when <b>admin_state_up</b> of the load balancer or of the listener is set to <b>false</b>.</li></ul> <p><b>NOTE</b><br/><b>DEGRADED</b> and <b>DISABLED</b> are returned only when the API for querying the load balancer status tree is called.</p> |

**Table 5-147** LoadBalancerStatusPolicy

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| action    | String | <p><b>Definition:</b> Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL</b>: Requests are forwarded to another backend server group.</li><li>• <b>REDIRECT_TO_LISTENER</b>: Requests are redirected to an HTTPS listener.</li></ul> |
| id        | String | <p><b>Definition:</b> Specifies the forwarding policy ID.</p> <p><b>Range:</b> N/A</p>                                                                                                                                                                                                                                                                                              |

| Parameter           | Type                                                      | Description                                                                                                                                                                                                                                                                                                                                            |
|---------------------|-----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | String                                                    | <b>Definition:</b> Specifies the provisioning status of the forwarding policy.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ACTIVE</b> (default): The forwarding policy is provisioned successfully.</li><li>• <b>ERROR</b>: The forwarding policy has the same rule as another forwarding policy added to the same listener.</li></ul> |
| name                | String                                                    | <b>Definition:</b> Specifies the forwarding policy name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                          |
| rules               | Array of <a href="#">LoadBalancerStatusL7Rule</a> objects | <b>Definition:</b> Specifies the status of all forwarding rules in the forwarding policy.                                                                                                                                                                                                                                                              |

**Table 5-148** LoadBalancerStatusL7Rule

| Parameter           | Type   | Description                                                                                                                                                                                                                                                                                                                      |
|---------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                  | String | <b>Definition:</b> Specifies the ID of the forwarding rule.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                 |
| type                | String | <b>Definition:</b> Specifies the type of the match content.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>HOST_NAME</b>: A domain name will be used for matching.</li><li>• <b>PATH</b>: A URL will be used for matching.</li></ul>                                                                                |
| provisioning_status | String | <b>Definition:</b> Specifies the provisioning status of the forwarding rule.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ACTIVE</b> (default): The forwarding rule is in use.</li><li>• <b>ERROR</b>: The forwarding policy has the same rule as another forwarding policy added to the same listener.</li></ul> |

**Table 5-149** LoadBalancerStatusPool

| Parameter           | Type                                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | String                                                    | <b>Definition:</b> Specifies the provisioning status of the backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ACTIVE:</b> in use</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| name                | String                                                    | <b>Definition:</b> Specifies the backend server group name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| healthmonitor       | <a href="#">LoadBalancerStatusHealthMonitor</a> object    | <b>Definition:</b> Specifies the health check results of backend servers in the load balancer status tree.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| members             | Array of <a href="#">LoadBalancerStatusMember</a> objects | <b>Definition:</b> Specifies the statuses of all backend servers in the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| id                  | String                                                    | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| operating_status    | String                                                    | <b>Definition:</b> Specifies the operating status of the backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The backend server group is running normally.</li><li>• <b>DEGRADED:</b> This status is displayed only when <b>operating_status</b> of a backend server in the backend server group is set to <b>OFFLINE</b>.</li><li>• <b>DISABLED:</b> This status is displayed only when <b>admin_state_up</b> of the backend server group or of the associated load balancer is set to <b>false</b>.</li></ul> <b>NOTE</b><br><b>DEGRADED</b> and <b>DISABLED</b> are returned only when the API for querying the load balancer status tree is called. |

**Table 5-150** LoadBalancerStatusHealthMonitor

| Parameter           | Type   | Description                                                                                                                                                                  |
|---------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type                | String | <b>Definition:</b> Specifies the health check protocol.<br><b>Range:</b> TCP, UDP_CONNECT, or HTTP.                                                                          |
| id                  | String | <b>Definition:</b> Specifies the health check ID.<br><b>Range:</b> N/A                                                                                                       |
| name                | String | <b>Definition:</b> Specifies the health check name.<br><b>Range:</b> N/A                                                                                                     |
| provisioning_status | String | <b>Definition:</b> Specifies the provisioning status of the health check.<br><b>Range:</b> The value can only be <b>ACTIVE</b> , indicating that the health check is in use. |

**Table 5-151** LoadBalancerStatusMember

| Parameter           | Type    | Description                                                                                                                                                                      |
|---------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | String  | <b>Definition:</b> Specifies the provisioning status of the backend server.<br><b>Range:</b> The value can only be <b>ACTIVE</b> , indicating that the backend server is in use. |
| address             | String  | <b>Definition:</b> Specifies the IP address of the backend server.<br><b>Range:</b> N/A                                                                                          |
| protocol_port       | Integer | <b>Definition:</b> Specifies the port used by the backend server to receive requests.<br><b>Range:</b> 1 to 65535                                                                |
| id                  | String  | <b>Definition:</b> Specifies the backend server ID.<br><b>Range:</b> N/A                                                                                                         |

| Parameter        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String | <p><b>Definition:</b> Specifies the operating status of the backend server.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>DISABLED:</b> The backend server is not available. This status is displayed only when <b>admin_state_up</b> of the backend server, or the backend server group to which it belongs, or the associated load balancer is set to <b>false</b> and the API for querying the load balancer status tree is called.</li><li>• <b>OFFLINE:</b> The cloud server used as the backend server is stopped or does not exist.</li><li>• <b>INITIAL:</b> Initial status of the backend server when health check is enabled.</li><li>• <b>UNKNOWN:</b> The backend server group is not associated with a listener or the backend server is not associated with an ECS.</li></ul> |

## Example Requests

Querying the status tree of a load balancer

```
GET https://{ELB_Endpoint}/v3/{project_id}/elb/loadbalancers/38278031-cfca-44be-81be-a412f618773b/statuses
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "statuses": {
 "loadbalancer": {
 "name": "lb-jy",
 "provisioning_status": "ACTIVE",
 "listeners": [{
 "name": "listener-jy-1",
 "provisioning_status": "ACTIVE",
 "pools": [{
```

```
{
 "name" : "pool-jy-1",
 "provisioning_status" : "ACTIVE",
 "healthmonitor" : {
 "type" : "TCP",
 "id" : "7422b51a-0ed2-4702-9429-4f88349276c6",
 "name" : "",
 "provisioning_status" : "ACTIVE"
 },
 "members" : [{
 "protocol_port" : 80,
 "address" : "192.168.44.11",
 "id" : "7bbf7151-0dce-4087-b316-06c7fa17b894",
 "operating_status" : "ONLINE",
 "provisioning_status" : "ACTIVE"
 }],
 "id" : "c54b3286-2349-4c5c-ade1-e6bb0b26ad18",
 "operating_status" : "ONLINE"
},
"l7policies" : [],
"id" : "eb84c5b4-9bc5-4bee-939d-3900fb05dc7b",
"operating_status" : "ONLINE"
},
"pools" : [{
 "name" : "pool-jy-1",
 "provisioning_status" : "ACTIVE",
 "healthmonitor" : {
 "type" : "TCP",
 "id" : "7422b51a-0ed2-4702-9429-4f88349276c6",
 "name" : "",
 "provisioning_status" : "ACTIVE"
 },
 "members" : [{
 "protocol_port" : 80,
 "address" : "192.168.44.11",
 "id" : "7bbf7151-0dce-4087-b316-06c7fa17b894",
 "operating_status" : "ONLINE",
 "provisioning_status" : "ACTIVE"
 }],
 "id" : "c54b3286-2349-4c5c-ade1-e6bb0b26ad18",
 "operating_status" : "ONLINE"
}],
"id" : "38278031-cfca-44be-81be-a412f618773b",
"operating_status" : "ONLINE"
}
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowLoadBalancerStatusSolution {

 public static void main(String[] args) {
```

```
// The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before running
this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
ShowLoadBalancerStatusRequest request = new ShowLoadBalancerStatusRequest();
request.withLoadbalancerId("{loadbalancer_id}");
try {
 ShowLoadBalancerStatusResponse response = client.showLoadBalancerStatus(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ShowLoadBalancerStatusRequest()
 request.loadbalancer_id = "{loadbalancer_id}"
 response = client.show_load_balancer_status(request)
 print(response)
```



```
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ShowLoadBalancerStatusRequest{}
 request.LoadbalancerId = "{loadbalancer_id}"
 response, err := client.ShowLoadBalancerStatus(request)
 if err == nil {
 fmt.Printf("%v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.12 Querying the Topology of a Load Balancer

### Function

This API is used to query the topology of a load balancer. The topology includes the load balancer and its listeners and backend server groups.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/topology

**Table 5-152** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                            |

**Table 5-153** Query Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                       |
|-------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------|
| listener_id | No        | String | Specifies the listener ID.<br>Multiple values can be used for query in the format of <i>listener_id=xxx&amp;listener_id=xxx</i> . |

| Parameter              | Mandatory | Type    | Description                                                                                                                                               |
|------------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| pool_id                | No        | String  | Specifies the ID of the backend server group.<br>Multiple values can be used for query in the format of <i>pool_id=xxx&amp;pool_id=xxx</i> .              |
| listener_name          | No        | String  | Specifies the listener name.<br>Multiple values can be used for query in the format of <i>listener_name=xxx&amp;listener_name=xxx</i> .                   |
| listener_protocol      | No        | String  | Specifies the listener protocol.<br>Multiple values can be used for query in the format of <i>listener_protocol=xxx&amp;listener_protocol=xxx</i> .       |
| listener_protocol_port | No        | Integer | Specifies the listener port.<br>Multiple values can be used for query in the format of <i>listener_protocol_port=xxx&amp;listener_protocol_port=xxx</i> . |
| pool_name              | No        | String  | Specifies the name of the backend server group.<br>Multiple values can be used for query in the format of <i>pool_name=xxx&amp;pool_name=xxx</i> .        |

## Request Parameters

**Table 5-154** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 200**

**Table 5-155** Response body parameters

| Parameter  | Type                                              | Description                                                                                                                                                                          |
|------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| topology   | <a href="#">LoadBalancerTopologyResult</a> object | <b>Definition:</b> Load balancer topology.                                                                                                                                           |
| request_id | String                                            | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-156** LoadBalancerTopologyResult

| Parameter | Type                                          | Description                                           |
|-----------|-----------------------------------------------|-------------------------------------------------------|
| nodes     | <a href="#">TopologyNodes</a> object          | <b>Definition:</b> Topology node information.         |
| edges     | Array of <a href="#">TopologyEdge</a> objects | <b>Definition:</b> Edge information in the topology.  |
| labels    | <a href="#">TopologyLabels</a> object         | <b>Definition:</b> Label information in the topology. |

**Table 5-157** TopologyNodes

| Parameter     | Type                                              | Description                                                          |
|---------------|---------------------------------------------------|----------------------------------------------------------------------|
| loadbalancers | Array of <a href="#">LoadBalancerNode</a> objects | <b>Definition:</b> Load balancer information in the topology.        |
| eips          | Array of <a href="#">EipNode</a> objects          | <b>Definition:</b> EIP information in the topology.                  |
| listeners     | Array of <a href="#">ListenerNode</a> objects     | <b>Definition:</b> Listener information in the topology.             |
| pools         | Array of <a href="#">PoolNode</a> objects         | <b>Definition:</b> Backend server group information in the topology. |

**Table 5-158** LoadBalancerNode

| Parameter              | Type             | Description                                                                                                                                                                                                                                                                               |
|------------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                     | String           | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                   |
| name                   | String           | <b>Definition:</b> Specifies the load balancer name.<br><b>Range:</b> N/A                                                                                                                                                                                                                 |
| guaranteed             | Boolean          | <b>Definition:</b> Specifies whether the load balancer is a dedicated load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>false:</b> The load balancer is a shared load balancer.</li><li>• <b>true:</b> The load balancer is a dedicated load balancer.</li></ul> |
| l4_flavor_id           | String           | <b>Definition:</b> Specifies the ID of a flavor at Layer 4.<br><b>Range:</b> N/A                                                                                                                                                                                                          |
| l7_flavor_id           | String           | <b>Definition:</b> Specifies the ID of a flavor at Layer 7.<br><b>Range:</b> N/A                                                                                                                                                                                                          |
| vip_address            | String           | <b>Definition:</b> Specifies the private IPv4 address.<br><b>Range:</b> N/A                                                                                                                                                                                                               |
| ipv6_vip_address       | String           | <b>Definition:</b> Specifies the private IPv6 address.<br><b>Range:</b> N/A                                                                                                                                                                                                               |
| availability_zone_list | Array of strings | <b>Definition:</b> Specifies the list of AZs where the load balancers are created.<br><b>Range:</b> N/A                                                                                                                                                                                   |

**Table 5-159** EipNode

| Parameter  | Type   | Description                                                   |
|------------|--------|---------------------------------------------------------------|
| id         | String | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A |
| ip_address | String | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A    |

| Parameter  | Type    | Description                                                                                                                                        |
|------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_version | Integer | <b>Definition:</b> Specifies the EIP version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 EIP</li><li>• 6: IPv6 EIP</li></ul> |

**Table 5-160** ListenerNode

| Parameter     | Type                              | Description                                                                                                                                                                                                                                                                                                                             |
|---------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id            | String                            | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                      |
| name          | String                            | <b>Definition:</b> Specifies the listener name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                    |
| protocol      | String                            | <b>Definition:</b> Specifies the listener protocol.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                |
| protocol_port | Integer                           | <b>Definition:</b> Specifies the listening port.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                   |
| port_ranges   | Array of <b>PortRange</b> objects | <b>Definition:</b> Specifies one or more port ranges, including the start and end port numbers. A maximum of 10 port ranges can be specified. Port ranges cannot overlap with each other.<br><b>NOTE</b><br>This parameter can be specified only when <b>protocol_port</b> is set to <b>0</b> or <b>protocol_port</b> is not specified. |

**Table 5-161** PortRange

| Parameter  | Type    | Description                                                                                                                          |
|------------|---------|--------------------------------------------------------------------------------------------------------------------------------------|
| start_port | Integer | <b>Definition:</b> Specifies the start port number.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1-65535<br><b>Default value:</b> N/A |

| Parameter | Type    | Description                                                                                                                                                                                      |
|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| end_port  | Integer | <b>Definition:</b> Specifies the end port number.<br><b>Constraints:</b> The value must be greater than or equal to the start port number.<br><b>Range:</b> 1-65535<br><b>Default value:</b> N/A |

**Table 5-162** PoolNode

| Parameter    | Type   | Description                                                                                                 |
|--------------|--------|-------------------------------------------------------------------------------------------------------------|
| id           | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A                              |
| name         | String | <b>Definition:</b> Specifies the backend server group name.<br><b>Range:</b> N/A                            |
| protocol     | String | <b>Definition:</b> Specifies the backend server group protocol.<br><b>Range:</b> N/A                        |
| type         | String | <b>Definition:</b> Specifies the backend server group type.<br><b>Range:</b> N/A                            |
| lb_algorithm | String | <b>Definition:</b> Specifies the load balancing algorithm of the backend server group.<br><b>Range:</b> N/A |

**Table 5-163** TopologyEdge

| Parameter | Type   | Description                                                                      |
|-----------|--------|----------------------------------------------------------------------------------|
| source    | String | <b>Definition:</b> Specifies the ID of the source resource.<br><b>Range:</b> N/A |
| target    | String | <b>Definition:</b> Specifies the ID of the target resource.<br><b>Range:</b> N/A |

| Parameter   | Type   | Description                                                                        |
|-------------|--------|------------------------------------------------------------------------------------|
| source_type | String | <b>Definition:</b> Specifies the type of the source resource.<br><b>Range:</b> N/A |
| target_type | String | <b>Definition:</b> Specifies the type of the target resource.<br><b>Range:</b> N/A |
| label       | String | <b>Definition:</b> Specifies the edge label information.<br><b>Range:</b> N/A      |
| label_id    | String | <b>Definition:</b> Specifies the label ID.<br><b>Range:</b> N/A                    |

**Table 5-164** TopologyLabels

| Parameter  | Type                                         | Description                                                 |
|------------|----------------------------------------------|-------------------------------------------------------------|
| l7policies | Array of <a href="#">PolicyLabel</a> objects | <b>Definition:</b> Specifies the forwarding policy details. |

**Table 5-165** PolicyLabel

| Parameter      | Type    | Description                                                                                |
|----------------|---------|--------------------------------------------------------------------------------------------|
| id             | String  | <b>Definition:</b> Specifies the forwarding policy ID.<br><b>Range:</b> N/A                |
| name           | String  | <b>Definition:</b> Specifies the forwarding policy name.<br><b>Range:</b> N/A              |
| priority       | String  | <b>Definition:</b> Specifies the forwarding policy priority.<br><b>Range:</b> N/A          |
| action         | String  | <b>Definition:</b> Specifies the forwarding policy action.<br><b>Range:</b> N/A            |
| admin_state_up | Boolean | <b>Definition:</b> Specifies whether to enable the forwarding policy.<br><b>Range:</b> N/A |



| Parameter | Type                                    | Description                                    |
|-----------|-----------------------------------------|------------------------------------------------|
| rules     | Array of <a href="#">L7Rule</a> objects | <b>Definition:</b> Lists the forwarding rules. |

**Table 5-166** L7Rule

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                       |
|----------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the forwarding rule.<br><b>Range:</b> The value can only be <b>true</b> .<br>This parameter is unsupported. Please do not use it.                                                                                                                       |
| compare_type   | String  | <b>Definition:</b> Specifies how requests are matched with the forwarding rule.<br><b>Range:</b> If <b>type</b> is set to <b>HOST_NAME</b> , this parameter can only be set to <b>EQUAL_TO</b> . If <b>type</b> is set to <b>PATH</b> , the value can be <b>REGEX</b> , <b>STARTS_WITH</b> , or <b>EQUAL_TO</b> . |
| key            | String  | <b>Definition:</b> Specifies the key of the match content.<br><b>Range:</b> N/A                                                                                                                                                                                                                                   |
| project_id     | String  | <b>Definition:</b> Specifies the ID of the project where the forwarding rule is used.<br><b>Range:</b> N/A                                                                                                                                                                                                        |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type      | String | <p><b>Definition:</b> Specifies the forwarding rule type.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>HOST_NAME:</b> A domain name will be used for matching.</li><li>• <b>PATH:</b> A URL will be used for matching.</li><li>• <b>METHOD:</b> A request method will be used for matching.</li><li>• <b>HEADER:</b> A request header will be used for matching.</li><li>• <b>QUERY_STRING:</b> A query string will be used for matching.</li><li>• <b>SOURCE_IP:</b> A source IP address will be used for matching.</li><li>• <b>COOKIE:</b> A cookie will be used for matching.</li></ul>                                                                                                                                                                                                                                                                                                               |
| value     | String | <p><b>Definition:</b> Specifies the value of the match item.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, the value can contain letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b> and <b>compare_type</b> to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters: <code>_~'!;@^-%#&amp;\$. *+?,= :\ /() []{} </code></li><li>• If <b>type</b> is set to <b>METHOD</b>, <b>SOURCE_IP</b>, <b>HEADER</b>, or <b>QUERY_STRING</b>, this parameter will not take effect, and <b>conditions</b> will be used to specify the key and value.</li></ul> |

| Parameter           | Type                                           | Description                                                                                                                                                                                                                                                                                                                         |
|---------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | String                                         | <b>Definition:</b> Specifies the provisioning status of the forwarding rule. This parameter is invalid. The default value is <b>ACTIVE</b> .<br><b>Range:</b> <b>ACTIVE</b> , <b>PENDING_CREATE</b> , or <b>ERROR</b> .                                                                                                             |
| invert              | Boolean                                        | <b>Definition:</b> Specifies whether reverse matching is supported.<br><b>Range:</b> N/A                                                                                                                                                                                                                                            |
| id                  | String                                         | <b>Definition:</b> Specifies the forwarding rule ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                           |
| conditions          | Array of <a href="#">RuleCondition</a> objects | <b>Definition:</b> Specifies the conditions contained in a forwarding rule.<br><b>Range:</b> N/A                                                                                                                                                                                                                                    |
| created_at          | String                                         | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| updated_at          | String                                         | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.   |

**Table 5-167** RuleCondition

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <p><b>Definition:</b> Specifies the key of match item.</p> <p><b>Constraints:</b> All keys in the conditions list in the same rule must be the same.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>PATH</b>, <b>METHOD</b>, or <b>SOURCE_IP</b>, this parameter is an empty string.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the request and response header, and <b>value</b> indicates the value of the request and response header. Each key can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_).</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The key is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({ }), angle brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed.</li></ul> <p><b>Default value:</b> N/A</p> |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | String | <p><b>Definition:</b> Specifies the value of the match item.</p> <p><b>Constraints:</b> The value of each condition in a forwarding rule must be unique.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>key</b> is always an empty string and <b>value</b> indicates the domain name. Each value can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b>, <b>key</b> is always an empty string and <b>value</b> indicates the request path, which can contain 1 to 128 characters. If <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b> for a forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&amp;\$.*+?,:! \()/[]{}.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the HTTP header parameter, and <b>value</b> indicates the value of the request header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match one character.</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({}), angle</li></ul> |

| Parameter | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |      | <p>brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match one character.</p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>METHOD</b>, <b>key</b> is always an empty string and <b>value</b> indicates the HTTP method. The value can be <b>GET</b>, <b>PUT</b>, <b>POST</b>, <b>DELETE</b>, <b>PATCH</b>, <b>HEAD</b>, or <b>OPTIONS</b>.</li><li>• If <b>type</b> is set to <b>SOURCE_IP</b>, <b>key</b> is always an empty string and <b>value</b> indicates the source IP address of the request. The value is an IPv4 or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.</li></ul> <p><b>Default value:</b> N/A</p> |

## Example Requests

Querying the topology of a load balancer

```
GET https://{ELB_Endpoint}/v3/{project_id}/elb/loadbalancers/38278031-cfca-44be-81be-a412f618773b/topology
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "topology" : {
 "nodes" : {
 "loadbalancers" : [{
 "id" : "10000000-0000-0000-0000-000000000001",
 "name" : "elb-topology",
 "guaranteed" : true,
 "l4_flavor_id" : "c5dc2b58-d5b7-40d3-8646-485aff8b70bd",
 "l7_flavor_id" : "1b333094-bd31-4cb8-97e2-ea762fde3576",
 "vip_address" : "172.16.8.148",
 "ipv6_vip_address" : "2420:2023:410:230:2188:8eb:f42b:d3b5",
 "provisioning_status" : "ACTIVE",
 "availability_zone_list" : ["AZ1", "AZ2"]
 }],
 "eips" : [{
 "id" : "24000000-0000-0000-0000-100000000001",
 "ip_address" : "2420:2023:410:230:2188:8eb:f42b:d3b5",
```

```
 "ip_version" : 6
 }, {
 "id" : "26000000-0000-0000-0000-000000000001",
 "ip_address" : "10.185.106.199",
 "ip_version" : 4
 }],
 "listeners" : [{
 "id" : "20000000-0000-0000-0000-000000000001",
 "name" : "test-listener",
 "protocol" : "TCP",
 "protocol_port" : 8080,
 "port_ranges" : null
 }],
 "pools" : [{
 "id" : "40000000-0000-0000-0000-000000000001",
 "name" : "test-pool",
 "protocol" : "TCP",
 "type" : "instance",
 "lb_algorithm" : "ROUND_ROBIN"
 }]
},
{
 "edges" : [{
 "source" : "24000000-0000-0000-0000-100000000001",
 "target" : "10000000-0000-0000-0000-000000000001",
 "label" : null,
 "label_id" : null,
 "source_type" : "eips",
 "target_type" : "loadbalancers"
 }, {
 "source" : "24000000-0000-0000-0000-100000000001",
 "target" : "10000000-0000-0000-0000-000000000001",
 "label" : null,
 "label_id" : null,
 "source_type" : "eips",
 "target_type" : "loadbalancers"
 }, {
 "source" : "24000000-0000-0000-0000-100000000001",
 "target" : "20000000-0000-0000-0000-000000000001",
 "label" : null,
 "label_id" : null,
 "source_type" : "loadbalancers",
 "target_type" : "listeners"
 }, {
 "source" : "20000000-0000-0000-0000-000000000001",
 "target" : "40000000-0000-0000-0000-000000000001",
 "label" : "default_pool",
 "label_id" : null,
 "source_type" : "listeners",
 "target_type" : "pools"
 }],
 "labels" : {
 "l7policies" : [{
 "id" : "50000000-0000-0000-0000-000000000001",
 "name" : "test-l7policy",
 "priority" : 1,
 "action" : "REDIRECT_TO_POOL",
 "admin_state_up" : true,
 "rules" : [{
 "id" : "60000000-0000-0000-0000-000000000001",
 "compare_type" : "EQUAL_TO",
 "value" : "www.test.com",
 "type" : "HOST_NAME",
 "conditions" : [{
 "key" : null
 }],
 "value" : "www.test.com"
 }]
 }]
 }]
}
```

```
}]
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.13 Querying the IP Addresses Used by a Load Balancer to Forward Internal Requests

### Function

This API is used to query the IP addresses used by a load balancer to forward requests within a private network.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/local-ports

**Table 5-168** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |



| Parameter       | Mandatory | Type   | Description                                                                                                                     |
|-----------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-169** Query Parameters

| Parameter    | Mandatory | Type             | Description                                                                                                                                                                                                                                                              |
|--------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| port_id      | No        | Array of strings | <b>Definition:</b> Specifies the ID of the port used by the load balancer.<br>Multiple IDs can be used for query in the format of <i>port_id=xxx&amp;port_id=xxx</i> .                                                                                                   |
| ip_address   | No        | Array of strings | <b>Definition:</b> Specifies the private IPv4 address used by the load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>Multiple IP addresses can be used for query in the format of <i>ip_address=xxx&amp;ip_address=xxx</i> . |
| ipv6_address | No        | Array of strings | <b>Definition:</b> Specifies the IPv6 address used by the load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>Multiple IPv6 addresses can be used for query in the format of <i>ipv6_address=xxx&amp;ipv6_addresses=xxx</i> . |

| Parameter    | Mandatory | Type             | Description                                                                                                                                                                                                                                                                        |
|--------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type         | No        | Array of strings | <b>Definition:</b> Specifies the port type.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>Multiple types can be used for query in the format of <i>type=xxx&amp;type=xxx</i> .                                                                   |
| virsubnet_id | No        | Array of strings | <b>Definition:</b> Specifies the network ID of the downstream subnet where the port is located.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>Multiple IDs can be used for query in the format of <i>virsubnet_id=xxx&amp;virsubnet_id=xxx</i> . |

## Request Parameters

**Table 5-170** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-171** Response body parameters

| Parameter | Type                                       | Description                                                       |
|-----------|--------------------------------------------|-------------------------------------------------------------------|
| ports     | Array of <a href="#">LocalPort</a> objects | <b>Definition:</b> Specifies the ports used by the load balancer. |

| Parameter  | Type   | Description                                                                                                                                                                          |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-172** LocalPort

| Parameter    | Type   | Description                                                                                                                                                                                                                                                                                                                                                                            |
|--------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| port_id      | String | <b>Definition:</b> Specifies the ID of the port used by the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                        |
| ip_address   | String | <b>Definition:</b> Specifies the private IPv4 address used by the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                  |
| ipv6_address | String | <b>Definition:</b> Specifies the IPv6 address used by the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                          |
| type         | String | <b>Definition:</b> Specifies the port type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>l4_hc:</b> port used for health checks during Layer 4 traffic forwarding using DNAT.</li><li>• <b>l4:</b> port used for Layer 4 health checks and traffic forwarding using FullNAT.</li><li>• <b>l7:</b> port used for Layer 7 health checks and service forwarding.</li></ul> |
| virsubnet_id | String | <b>Definition:</b> Specifies the network ID of the downstream subnet where the port is located.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                   |

## Example Requests

Querying the ports used by a load balancer

```
GET https://{ELB_Endpoint}/v3/{project_id}/elb/loadbalancers/38278031-cfca-44be-81be-a412f618773b/local-ports
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "ports": [{
 "port_id": "b796e55e-988a-429e-a132-9245beb046e5",
 "ip_address": "192.168.1.2",
 "ipv6_address": "2420:2023:410:151:49c:7163:342a:3e3",
 "type": "l4_hc",
 "virsubnet_id": "4507af92-719f-4878-9394-6a6a6ba1dcbb"
 }]
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowLoadBalancerPortsSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowLoadBalancerPortsRequest request = new ShowLoadBalancerPortsRequest();
 request.withLoadbalancerId("{loadbalancer_id}");
 try {
 ShowLoadBalancerPortsResponse response = client.showLoadBalancerPorts(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 }
 }
}
```

```
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ShowLoadBalancerPortsRequest()
 request.loadbalancer_id = "{loadbalancer_id}"
 response = client.show_load_balancer_ports(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
```

```
WithSk(sk).
WithProjectId(projectId).
Build()

client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.ShowLoadBalancerPortsRequest{}
request.LoadbalancerId = "{loadbalancer_id}"
response, err := client.ShowLoadBalancerPorts(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.14 Deploying a Load Balancer in Additional AZs

### Function

This API is used to deploy a load balancer in additional AZs.

### Constraints

This API is only available for dedicated load balancers.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/availability-zone/batch-add

**Table 5-173** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                            |

## Request Parameters

**Table 5-174** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | No        | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-175** Request body parameters

| Parameter              | Mandatory | Type             | Description                                                                                                                                                 |
|------------------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|
| availability_zone_list | Yes       | Array of strings | <b>Definition:</b> Specifies new AZs where the load balancer will be deployed.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

Status code: 200

**Table 5-176** Response body parameters

| Parameter    | Type                       | Description                                                                                                                                                                          |
|--------------|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer | <b>LoadBalancer</b> object | <b>Definition:</b> Specifies the load balancer.                                                                                                                                      |
| request_id   | String                     | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-177** LoadBalancer

| Parameter           | Type                            | Description                                                                                                                                                                                                   |
|---------------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                  | String                          | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A                                                                                                                                       |
| description         | String                          | <b>Definition:</b> Provides supplementary information about the load balancer.<br><b>Range:</b> N/A                                                                                                           |
| provisioning_status | String                          | <b>Definition:</b> Specifies the provisioning status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ACTIVE:</b> in use</li><li>• <b>PENDING_DELETE:</b> deleting</li></ul> |
| admin_state_up      | Boolean                         | <b>Definition:</b> Specifies whether the load balancer is enabled.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> enabled</li><li>• <b>false:</b> disabled</li></ul>                   |
| provider            | String                          | <b>Definition:</b> Specifies the provider of the load balancer. The value is fixed to <b>vlb</b> .<br><b>Range:</b> N/A                                                                                       |
| pools               | Array of <b>PoolRef</b> objects | <b>Definition:</b> Lists the IDs of backend server groups associated with the load balancer.                                                                                                                  |



| Parameter          | Type                                         | Description                                                                                                                                                                                                                                  |
|--------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listeners          | Array of <a href="#">ListenerRef</a> objects | <b>Definition:</b> Lists the IDs of listeners associated with the load balancer.                                                                                                                                                             |
| operating_status   | String                                       | <b>Definition:</b> Specifies the operating status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The load balancer is online.</li><li>• <b>FROZEN:</b> The load balancer is frozen.</li></ul> |
| name               | String                                       | <b>Definition:</b> Specifies the load balancer name.<br><b>Range:</b> N/A                                                                                                                                                                    |
| project_id         | String                                       | <b>Definition:</b> Specifies the ID of the project where the load balancer is used.<br><b>Range:</b> N/A                                                                                                                                     |
| vip_subnet_cidr_id | String                                       | <b>Definition:</b> Specifies the ID of the IPv4 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br><b>Range:</b> N/A                                                                              |
| vip_address        | String                                       | <b>Definition:</b> Specifies the private IPv4 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                             |
| vip_port_id        | String                                       | <b>Definition:</b> Specifies the ID of the port bound to the private IPv4 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                 |
| tags               | Array of <a href="#">Tag</a> objects         | <b>Definition:</b> Specifies the tags added to the load balancer.                                                                                                                                                                            |
| created_at         | String                                       | <b>Definition:</b> Specifies the time when the load balancer was created.<br><b>Range:</b><br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                           |

| Parameter              | Type                                     | Description                                                                                                                                                                                                                                                                               |
|------------------------|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at             | String                                   | <b>Definition:</b> Specifies the time when the load balancer was updated.<br><b>Range:</b><br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                        |
| guaranteed             | Boolean                                  | <b>Definition:</b> Specifies whether the load balancer is a dedicated load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>false:</b> The load balancer is a shared load balancer.</li><li>• <b>true:</b> The load balancer is a dedicated load balancer.</li></ul> |
| vpc_id                 | String                                   | <b>Definition:</b> Specifies the ID of the VPC where the load balancer is located.<br><b>Range:</b> N/A                                                                                                                                                                                   |
| eips                   | Array of <a href="#">EipInfo</a> objects | <b>Definition:</b> Specifies the EIP bound to the load balancer.<br><b>NOTE</b><br>This parameter has the same meaning as <b>publicips</b> .                                                                                                                                              |
| ipv6_vip_address       | String                                   | <b>Definition:</b> Specifies the IPv6 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                                                  |
| ipv6_vip_virsubnet_id  | String                                   | <b>Definition:</b> Specifies the ID of the IPv6 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br><b>Range:</b> N/A                                                                                                                           |
| ipv6_vip_port_id       | String                                   | <b>Definition:</b> Specifies the ID of the port bound to the IPv6 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                      |
| availability_zone_list | Array of strings                         | <b>Definition:</b> Specifies the list of AZs where the load balancers are created.<br><b>Range:</b> N/A                                                                                                                                                                                   |

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                       |
|-----------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | String | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |
| billing_info          | String | <b>Definition:</b> Provides resource billing information.<br><b>Range:</b> <ul style="list-style-type: none"><li>• If the value is left blank, the resource is billed on a pay-per-use basis.</li></ul> <p>This parameter is unsupported. Please do not use it.</p>               |
| l4_flavor_id          | String | <b>Definition:</b> Specifies the ID of a flavor at Layer 4.<br>If the current load balancer is an elastic flavor instance, this parameter defines the maximum elastic flavor at Layer 4.<br><b>Range:</b> N/A                                                                     |
| l4_scale_flavor_id    | String | <b>Definition:</b> Specifies the ID of an elastic flavor at Layer 4.<br><b>Range:</b> N/A<br><b>NOTE</b><br>This parameter has been discarded. Do not use it.                                                                                                                     |
| l7_flavor_id          | String | <b>Definition:</b> Specifies the ID of a flavor at Layer 7.<br>If the current load balancer is an elastic flavor instance, this parameter defines the maximum elastic flavor at Layer 7.<br><b>Range:</b> N/A                                                                     |
| l7_scale_flavor_id    | String | <b>Definition:</b> Specifies the ID of an elastic flavor at Layer 7.<br><b>Range:</b> N/A<br><b>NOTE</b><br>This parameter has been discarded. Do not use it.                                                                                                                     |

| Parameter          | Type                                  | Description                                                                                                                                                                                                                                                              |
|--------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| gw_flavor_id       | String                                | <b>Definition:</b> Specifies the flavor ID of the gateway load balancer.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                                    |
| loadbalancer_type  | String                                | <b>Definition:</b> Specifies the load balancer type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>gateway:</b> gateway load balancers</li><li>• <b>null:</b> other types of load balancers</li></ul> This parameter is unsupported. Please do not use it. |
| publicips          | Array of <b>PublicIpInfo</b> objects  | <b>Definition:</b> Specifies the EIP bound to the load balancer.<br><b>NOTE</b><br>This parameter has the same meaning as <b>eips</b> .                                                                                                                                  |
| global_eips        | Array of <b>GlobalEipInfo</b> objects | <b>Definition:</b> Specifies the global EIP bound to the load balancer.                                                                                                                                                                                                  |
| elb_virsubnet_ids  | Array of strings                      | <b>Definition:</b> Specifies the network IDs of subnets on the downstream plane.<br><b>Range:</b> N/A                                                                                                                                                                    |
| elb_virsubnet_type | String                                | <b>Definition:</b> Specifies the type of the subnet on the downstream plane.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ipv4:</b> IPv4 subnets</li><li>• <b>dualstack:</b> subnets that support IPv4/IPv6 dual stack</li></ul>                          |

| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_target_enable           | Boolean | <p><b>Definition:</b> Specifies whether to add backend servers that are not in the load balancer's VPC.</p> <p>If you set it to <b>true</b>, you can associate servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using server IP addresses.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> |
| frozen_scene               | String  | <p><b>Definition:</b> Specifies the scenario where the load balancer is frozen.</p> <p>If there are multiple scenarios, separate them with commas (,).</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>ILLEGAL:</b> The load balancer is frozen due to violation of laws and regulations.</li><li>• <b>VERIFY:</b> Your account has not completed real-name authentication.</li><li>• <b>PARTNER:</b> The load balancer is frozen by the partner.</li><li>• <b>ARREAR:</b> The load balancer is frozen due to arrears.</li></ul>                         |
| deletion_protection_enable | Boolean | <p><b>Definition:</b> Specifies whether to enable deletion protection. This parameter is returned only when the deletion protection is enabled in the current region.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>false:</b> This option will be disabled.</li><li>• <b>true:</b> This option will be enabled.</li></ul>                                                                                                                                                                                                                             |

| Parameter           | Type                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| autoscaling         | <a href="#">AutoscalingRef</a> object | <b>Definition:</b> Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer flavors can be automatically adjusted based on incoming traffic.<br><b>NOTE</b><br>This parameter has been deprecated, but is retained for compatibility purposes. Using this parameter is not recommended. If this parameter is specified, the load balancer with minimum flavors will be created and you will be billed for the minimum flavors.            |
| public_border_group | String                                | <b>Definition:</b> Specifies the public border group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>center:</b> public border group of the central site</li><li>• Edge site name: public border group of an edge site</li></ul>                                                                                                                                                                                                                                  |
| charge_mode         | String                                | <b>Definition:</b> Specifies the charge mode of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>flavor:</b> billed by the fixed flavor you select.</li><li>• <b>lcu:</b> billed by how many LCUs you have used.</li><li>• <b>Null:</b> If it is a shared load balancer, it is free. If it is a dedicated load balancer, it will be billed by the fixed flavor you select.</li></ul> <p>This parameter is unsupported. Please do not use it.</p> |
| service_lb_mode     | String                                | <b>Definition:</b> Specifies load balancer mode.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>lb:</b> Cross-tenant access is not supported.</li><li>• <b>ep:</b> Cross-tenant access is supported.</li></ul> <p>This parameter is unsupported. Please do not use it.</p>                                                                                                                                                                                        |

| Parameter                 | Type                                                    | Description                                                                                                                                                                                                                                                 |
|---------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| instance_type             | String                                                  | <b>Definition:</b> Specifies the internal service to which the load balancer belongs.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                          |
| instance_id               | String                                                  | <b>Definition:</b> Specifies the ID of the instance with which the load balancer is associated.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                |
| proxy_protocol_extensions | Array of <a href="#">ProxyProtocolExtension</a> objects | <b>Definition:</b> Specifies the proxy protocol extension.<br>This parameter is unsupported. Please do not use it.                                                                                                                                          |
| waf_failure_action        | String                                                  | <b>Definition:</b> Specifies traffic distributing policies when the WAF is faulty.<br><b>Range:</b> <b>discard</b> indicates traffic will not be distributed. <b>forward</b> indicates traffic will be distributed to the default backend servers.          |
| protection_status         | String                                                  | <b>Definition:</b> Specifies the protection status.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul> |
| protection_reason         | String                                                  | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>).                                                                             |
| log_group_id              | String                                                  | <b>Definition:</b> Specifies the ID of the log group that is associated with the load balancer.<br><b>Range:</b> N/A                                                                                                                                        |
| log_topic_id              | String                                                  | <b>Definition:</b> Specifies the ID of the log topic that is associated with the load balancer.<br><b>Range:</b> N/A                                                                                                                                        |

| Parameter        | Type                                  | Description                                                                                                                         |
|------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| custom_qos_limit | <a href="#">CustomQosLimit</a> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors.<br>This parameter is unsupported. Please do not use it. |

**Table 5-178** PoolRef

| Parameter | Type   | Description                                                                    |
|-----------|--------|--------------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A |

**Table 5-179** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

**Table 5-180** Tag

| Parameter | Type   | Description                                                      |
|-----------|--------|------------------------------------------------------------------|
| key       | String | <b>Definition:</b> Specifies the tag key.<br><b>Range:</b> N/A   |
| value     | String | <b>Definition:</b> Specifies the tag value.<br><b>Range:</b> N/A |

**Table 5-181** EipInfo

| Parameter   | Type   | Description                                                   |
|-------------|--------|---------------------------------------------------------------|
| eip_id      | String | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A |
| eip_address | String | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A    |



| Parameter  | Type    | Description                                                                                                                                                           |
|------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_version | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

**Table 5-182** PublicIpInfo

| Parameter        | Type    | Description                                                                                                                                                       |
|------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| publicip_id      | String  | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A                                                                                                     |
| publicip_address | String  | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A                                                                                                        |
| ip_version       | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 address</li><li>• 6: IPv6 address</li></ul> |

**Table 5-183** GlobalEipInfo

| Parameter            | Type    | Description                                                                                                                                                           |
|----------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| global_eip_id        | String  | <b>Definition:</b> Specifies the ID of the global EIP.<br><b>Range:</b> N/A                                                                                           |
| global_eip_addresses | String  | <b>Definition:</b> Specifies the global EIP.<br><b>Range:</b> N/A                                                                                                     |
| ip_version           | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

**Table 5-184** AutoscalingRef

| Parameter        | Type    | Description                                                                                                                                                                                                                                              |
|------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable           | Boolean | <b>Definition:</b> Specifies whether to enable elastic scaling for the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> |
| min_l7_flavor_id | String  | <b>Definition:</b> Specifies the ID of the minimum elastic flavor at Layer 7.<br><b>Range:</b> N/A                                                                                                                                                       |

**Table 5-185** ProxyProtocolExtension

| Parameter        | Type                    | Description                                                                                                                 |
|------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| vip_address      | String                  | <b>Definition:</b> Specifies the IPv4 address.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| ipv6_vip_address | String                  | <b>Definition:</b> Specifies the IPv6 address.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| extension        | <b>Extension</b> object | <b>Definition:</b> Specifies the proxy protocol extension.<br><b>Constraints:</b> N/A                                       |

**Table 5-186** Extension

| Parameter | Type   | Description                                                                                                                    |
|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------|
| ep_id     | String | <b>Definition:</b> Specifies the VPC endpoint ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter     | Type   | Description                                                                                                                            |
|---------------|--------|----------------------------------------------------------------------------------------------------------------------------------------|
| ep_service_id | String | <b>Definition:</b> Specifies the VPC endpoint service ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-187** CustomQosLimit

| Parameter | Type                  | Description                                                                            |
|-----------|-----------------------|----------------------------------------------------------------------------------------|
| l4        | <b>L4Limit</b> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors at Layer 4. |
| l7        | <b>L7Limit</b> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors at Layer 7. |

**Table 5-188** L4Limit

| Parameter  | Type    | Description                                                                                                |
|------------|---------|------------------------------------------------------------------------------------------------------------|
| connection | Integer | <b>Definition:</b> Specifies the maximum number of concurrent connections at Layer 4.<br><b>Range:</b> N/A |
| cps        | Integer | <b>Definition:</b> Specifies the maximum number of new connections at Layer 4.<br><b>Range:</b> N/A        |

**Table 5-189** L7Limit

| Parameter  | Type    | Description                                                                                                |
|------------|---------|------------------------------------------------------------------------------------------------------------|
| connection | Integer | <b>Definition:</b> Specifies the maximum number of concurrent connections at Layer 7.<br><b>Range:</b> N/A |
| cps        | Integer | <b>Definition:</b> Specifies the maximum number of new connections at Layer 7.<br><b>Range:</b> N/A        |

## Example Requests

### Adding an AZ

```
POST https://{ELB_Endpoint}/v3/060576782980d5762f9ec014dd2f1148/elb/loadbalancers/
9b663cd9-61e4-483d-b91f-92fc337fecec/availability-zone/batch-add

{
 "availability_zone_list" : ["az2", "az3"]
}
```

## Example Responses

### Status code: 200

Successful request.

```
{
 "request_id" : "6c63d0ac-7beb-451d-a3e0-a066beaea316",
 "loadbalancer" : {
 "id" : "9b663cd9-61e4-483d-b91f-92fc337fecec",
 "project_id" : "060576782980d5762f9ec014dd2f1148",
 "name" : "elb-reset",
 "description" : "",
 "vip_port_id" : null,
 "vip_address" : null,
 "admin_state_up" : true,
 "provisioning_status" : "ACTIVE",
 "operating_status" : "ONLINE",
 "listeners" : [],
 "pools" : [],
 "tags" : [],
 "provider" : "vlb",
 "created_at" : "2021-07-26T02:46:31Z",
 "updated_at" : "2021-07-26T02:46:59Z",
 "vpc_id" : "59cb11ef-f185-49ba-92af-0539e8ff9734",
 "enterprise_project_id" : "0",
 "availability_zone_list" : ["az1", "az2", "az3"],
 "ipv6_vip_address" : null,
 "ipv6_vip_virsubnet_id" : null,
 "ipv6_vip_port_id" : null,
 "publicips" : [{
 "publicip_id" : "0c07e04d-e2f9-41ad-b934-f58a65b6734d",
 "publicip_address" : "97.97.2.171",
 "ip_version" : 4
 }],
 "elb_virsubnet_ids" : ["7f817f9c-8731-4002-9e47-18cb8d431787"],
 "elb_virsubnet_type" : "dualstack",
 "ip_target_enable" : false,
 "autoscaling" : {
 "enable" : false,
 "min_l7_flavor_id" : ""
 },
 "frozen_scene" : null,
 "eips" : [{
 "eip_id" : "0c07e04d-e2f9-41ad-b934-f58a65b6734d",
 "eip_address" : "97.97.2.171",
 "ip_version" : 4
 }],
 "guaranteed" : true,
 "billing_info" : null,
 "l4_flavor_id" : "636ba721-935a-4ca5-a685-8076ce0e4148",
 "l4_scale_flavor_id" : null,
 "l7_flavor_id" : null,
 "l7_scale_flavor_id" : null,
 "vip_subnet_cidr_id" : null,
 "public_border_group" : "center",
 "protection_status" : "nonProtection",
 }
}
```

```
"protection_reason" : ""
}
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

#### Adding an AZ

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchAddAvailableZonesSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 BatchAddAvailableZonesRequest request = new BatchAddAvailableZonesRequest();
 request.withLoadbalancerId("{loadbalancer_id}");
 BatchAddAvailableZonesRequestBody body = new BatchAddAvailableZonesRequestBody();
 List<String> listbodyAvailabilityZoneList = new ArrayList<>();
 listbodyAvailabilityZoneList.add("az2");
 listbodyAvailabilityZoneList.add("az3");
 body.withAvailabilityZoneList(listbodyAvailabilityZoneList);
 request.withBody(body);
 try {
 BatchAddAvailableZonesResponse response = client.batchAddAvailableZones(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 }
 }
}
```

```
 System.out.println(e.getErrorMsg());
 }
}
}
```

## Python

### Adding an AZ

```
coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskgelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskgelb.v3 import *
```

```
if __name__ == "__main__":
```

```
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
```

```
 # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
```

```
 ak = os.environ["CLOUD_SDK_AK"]
```

```
 sk = os.environ["CLOUD_SDK_SK"]
```

```
 projectId = "{project_id}"
```

```
 credentials = BasicCredentials(ak, sk, projectId)
```

```
 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()
```

```
 try:
```

```
 request = BatchAddAvailableZonesRequest()
```

```
 request.loadbalancer_id = "{loadbalancer_id}"
```

```
 listAvailabilityZoneListbody = [
```

```
 "az2",
```

```
 "az3"
```

```
]
```

```
 request.body = BatchAddAvailableZonesRequestBody(
```

```
 availability_zone_list=listAvailabilityZoneListbody
```

```
)
```

```
 response = client.batch_add_available_zones(request)
```

```
 print(response)
```

```
 except exceptions.ClientRequestException as e:
```

```
 print(e.status_code)
```

```
 print(e.request_id)
```

```
 print(e.error_code)
```

```
 print(e.error_msg)
```

## Go

### Adding an AZ

```
package main
```

```
import (
```

```
 "fmt"
```

```
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
```

```
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
```

```
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
```

```
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
```

```
)
```

```
func main() {
```

```
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
```

```
risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.BatchAddAvailableZonesRequest{}
request.LoadbalancerId = "{loadbalancer_id}"
var listAvailabilityZoneListbody = []string{
 "az2",
 "az3",
}
request.Body = &model.BatchAddAvailableZonesRequestBody{
 AvailabilityZoneList: listAvailabilityZoneListbody,
}
response, err := client.BatchAddAvailableZones(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.15 Removing a Load Balancer from AZs

### Function

This API is used to remove a load balancer from one or more AZs where it is working.

 **NOTE**

Removing a load balancer from an AZ may disconnect existing connections.

## Constraints

- This API is only available for dedicated load balancers.
- You cannot remove a load balancer from all AZs where it is working.

## Calling Method

For details, see [Calling APIs](#).

## URI

POST /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/availability-zone/batch-remove

**Table 5-190** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                            |



## Request Parameters

**Table 5-191** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | No        | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-192** Request body parameters

| Parameter              | Mandatory | Type             | Description                                                                                                                                                |
|------------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|
| availability_zone_list | Yes       | Array of strings | <b>Definition:</b> Specifies the AZs where the load balancer will be removed.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-193** Response body parameters

| Parameter    | Type                                | Description                                                                                                                                                                          |
|--------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer | <a href="#">LoadBalancer</a> object | <b>Definition:</b> Specifies the load balancer.                                                                                                                                      |
| request_id   | String                              | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-194** LoadBalancer

| Parameter           | Type                                         | Description                                                                                                                                                                                                                                  |
|---------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                  | String                                       | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A                                                                                                                                                                      |
| description         | String                                       | <b>Definition:</b> Provides supplementary information about the load balancer.<br><b>Range:</b> N/A                                                                                                                                          |
| provisioning_status | String                                       | <b>Definition:</b> Specifies the provisioning status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ACTIVE:</b> in use</li><li>• <b>PENDING_DELETE:</b> deleting</li></ul>                                |
| admin_state_up      | Boolean                                      | <b>Definition:</b> Specifies whether the load balancer is enabled.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> enabled</li><li>• <b>false:</b> disabled</li></ul>                                                  |
| provider            | String                                       | <b>Definition:</b> Specifies the provider of the load balancer. The value is fixed to <b>vlb</b> .<br><b>Range:</b> N/A                                                                                                                      |
| pools               | Array of <a href="#">PoolRef</a> objects     | <b>Definition:</b> Lists the IDs of backend server groups associated with the load balancer.                                                                                                                                                 |
| listeners           | Array of <a href="#">ListenerRef</a> objects | <b>Definition:</b> Lists the IDs of listeners associated with the load balancer.                                                                                                                                                             |
| operating_status    | String                                       | <b>Definition:</b> Specifies the operating status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The load balancer is online.</li><li>• <b>FROZEN:</b> The load balancer is frozen.</li></ul> |
| name                | String                                       | <b>Definition:</b> Specifies the load balancer name.<br><b>Range:</b> N/A                                                                                                                                                                    |

| Parameter          | Type                                 | Description                                                                                                                                                                                                                                                                               |
|--------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id         | String                               | <b>Definition:</b> Specifies the ID of the project where the load balancer is used.<br><b>Range:</b> N/A                                                                                                                                                                                  |
| vip_subnet_cidr_id | String                               | <b>Definition:</b> Specifies the ID of the IPv4 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br><b>Range:</b> N/A                                                                                                                           |
| vip_address        | String                               | <b>Definition:</b> Specifies the private IPv4 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                                          |
| vip_port_id        | String                               | <b>Definition:</b> Specifies the ID of the port bound to the private IPv4 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                              |
| tags               | Array of <a href="#">Tag</a> objects | <b>Definition:</b> Specifies the tags added to the load balancer.                                                                                                                                                                                                                         |
| created_at         | String                               | <b>Definition:</b> Specifies the time when the load balancer was created.<br><b>Range:</b><br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                        |
| updated_at         | String                               | <b>Definition:</b> Specifies the time when the load balancer was updated.<br><b>Range:</b><br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                        |
| guaranteed         | Boolean                              | <b>Definition:</b> Specifies whether the load balancer is a dedicated load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>false:</b> The load balancer is a shared load balancer.</li><li>• <b>true:</b> The load balancer is a dedicated load balancer.</li></ul> |
| vpc_id             | String                               | <b>Definition:</b> Specifies the ID of the VPC where the load balancer is located.<br><b>Range:</b> N/A                                                                                                                                                                                   |

| Parameter              | Type                                     | Description                                                                                                                                                                                                                                                                       |
|------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| eips                   | Array of <a href="#">EipInfo</a> objects | <b>Definition:</b> Specifies the EIP bound to the load balancer.<br><b>NOTE</b><br>This parameter has the same meaning as <b>publicips</b> .                                                                                                                                      |
| ipv6_vip_address       | String                                   | <b>Definition:</b> Specifies the IPv6 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                                          |
| ipv6_vip_virsubnet_id  | String                                   | <b>Definition:</b> Specifies the ID of the IPv6 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br><b>Range:</b> N/A                                                                                                                   |
| ipv6_vip_port_id       | String                                   | <b>Definition:</b> Specifies the ID of the port bound to the IPv6 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                              |
| availability_zone_list | Array of strings                         | <b>Definition:</b> Specifies the list of AZs where the load balancers are created.<br><b>Range:</b> N/A                                                                                                                                                                           |
| enterprise_project_id  | String                                   | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |
| billing_info           | String                                   | <b>Definition:</b> Provides resource billing information.<br><b>Range:</b> <ul style="list-style-type: none"><li>• If the value is left blank, the resource is billed on a pay-per-use basis.</li></ul> <p>This parameter is unsupported. Please do not use it.</p>               |
| l4_flavor_id           | String                                   | <b>Definition:</b> Specifies the ID of a flavor at Layer 4.<br><br>If the current load balancer is an elastic flavor instance, this parameter defines the maximum elastic flavor at Layer 4.<br><b>Range:</b> N/A                                                                 |

| Parameter          | Type                                           | Description                                                                                                                                                                                                                                                              |
|--------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| l4_scale_flavor_id | String                                         | <b>Definition:</b> Specifies the ID of an elastic flavor at Layer 4.<br><b>Range:</b> N/A<br><b>NOTE</b><br>This parameter has been discarded. Do not use it.                                                                                                            |
| l7_flavor_id       | String                                         | <b>Definition:</b> Specifies the ID of a flavor at Layer 7.<br>If the current load balancer is an elastic flavor instance, this parameter defines the maximum elastic flavor at Layer 7.<br><b>Range:</b> N/A                                                            |
| l7_scale_flavor_id | String                                         | <b>Definition:</b> Specifies the ID of an elastic flavor at Layer 7.<br><b>Range:</b> N/A<br><b>NOTE</b><br>This parameter has been discarded. Do not use it.                                                                                                            |
| gw_flavor_id       | String                                         | <b>Definition:</b> Specifies the flavor ID of the gateway load balancer.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                                    |
| loadbalancer_type  | String                                         | <b>Definition:</b> Specifies the load balancer type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>gateway:</b> gateway load balancers</li><li>• <b>null:</b> other types of load balancers</li></ul> This parameter is unsupported. Please do not use it. |
| publicips          | Array of <a href="#">PublicIpInfo</a> objects  | <b>Definition:</b> Specifies the EIP bound to the load balancer.<br><b>NOTE</b><br>This parameter has the same meaning as <b>eips</b> .                                                                                                                                  |
| global_eips        | Array of <a href="#">GlobalEipInfo</a> objects | <b>Definition:</b> Specifies the global EIP bound to the load balancer.                                                                                                                                                                                                  |
| elb_virsubnet_ids  | Array of strings                               | <b>Definition:</b> Specifies the network IDs of subnets on the downstream plane.<br><b>Range:</b> N/A                                                                                                                                                                    |

| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| elb_virsubnet_type         | String  | <b>Definition:</b> Specifies the type of the subnet on the downstream plane.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ipv4:</b> IPv4 subnets</li><li>• <b>dualstack:</b> subnets that support IPv4/IPv6 dual stack</li></ul>                                                                                                                                                                                                                                                                                                                |
| ip_target_enable           | Boolean | <b>Definition:</b> Specifies whether to add backend servers that are not in the load balancer's VPC.<br>If you set it to <b>true</b> , you can associate servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using server IP addresses.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> |
| frozen_scene               | String  | <b>Definition:</b> Specifies the scenario where the load balancer is frozen.<br>If there are multiple scenarios, separate them with commas (,).<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ILLEGAL:</b> The load balancer is frozen due to violation of laws and regulations.</li><li>• <b>VERIFY:</b> Your account has not completed real-name authentication.</li><li>• <b>PARTNER:</b> The load balancer is frozen by the partner.</li><li>• <b>ARREAR:</b> The load balancer is frozen due to arrears.</li></ul>                          |
| deletion_protection_enable | Boolean | <b>Definition:</b> Specifies whether to enable deletion protection. This parameter is returned only when the deletion protection is enabled in the current region.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>false:</b> This option will be disabled.</li><li>• <b>true:</b> This option will be enabled.</li></ul>                                                                                                                                                                                                                          |

| Parameter           | Type                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| autoscaling         | <a href="#">AutoscalingRef</a> object | <b>Definition:</b> Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer flavors can be automatically adjusted based on incoming traffic.<br><b>NOTE</b><br>This parameter has been deprecated, but is retained for compatibility purposes. Using this parameter is not recommended. If this parameter is specified, the load balancer with minimum flavors will be created and you will be billed for the minimum flavors.            |
| public_border_group | String                                | <b>Definition:</b> Specifies the public border group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>center:</b> public border group of the central site</li><li>• Edge site name: public border group of an edge site</li></ul>                                                                                                                                                                                                                                  |
| charge_mode         | String                                | <b>Definition:</b> Specifies the charge mode of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>flavor:</b> billed by the fixed flavor you select.</li><li>• <b>lcu:</b> billed by how many LCUs you have used.</li><li>• <b>Null:</b> If it is a shared load balancer, it is free. If it is a dedicated load balancer, it will be billed by the fixed flavor you select.</li></ul> <p>This parameter is unsupported. Please do not use it.</p> |
| service_lb_mode     | String                                | <b>Definition:</b> Specifies load balancer mode.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>lb:</b> Cross-tenant access is not supported.</li><li>• <b>ep:</b> Cross-tenant access is supported.</li></ul> <p>This parameter is unsupported. Please do not use it.</p>                                                                                                                                                                                        |

| Parameter                 | Type                                                    | Description                                                                                                                                                                                                                                                 |
|---------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| instance_type             | String                                                  | <b>Definition:</b> Specifies the internal service to which the load balancer belongs.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                          |
| instance_id               | String                                                  | <b>Definition:</b> Specifies the ID of the instance with which the load balancer is associated.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                |
| proxy_protocol_extensions | Array of <a href="#">ProxyProtocolExtension</a> objects | <b>Definition:</b> Specifies the proxy protocol extension.<br>This parameter is unsupported. Please do not use it.                                                                                                                                          |
| waf_failure_action        | String                                                  | <b>Definition:</b> Specifies traffic distributing policies when the WAF is faulty.<br><b>Range:</b> <b>discard</b> indicates traffic will not be distributed. <b>forward</b> indicates traffic will be distributed to the default backend servers.          |
| protection_status         | String                                                  | <b>Definition:</b> Specifies the protection status.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul> |
| protection_reason         | String                                                  | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>).                                                                             |
| log_group_id              | String                                                  | <b>Definition:</b> Specifies the ID of the log group that is associated with the load balancer.<br><b>Range:</b> N/A                                                                                                                                        |
| log_topic_id              | String                                                  | <b>Definition:</b> Specifies the ID of the log topic that is associated with the load balancer.<br><b>Range:</b> N/A                                                                                                                                        |



| Parameter        | Type                                  | Description                                                                                                                         |
|------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| custom_qos_limit | <a href="#">CustomQosLimit</a> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors.<br>This parameter is unsupported. Please do not use it. |

**Table 5-195** PoolRef

| Parameter | Type   | Description                                                                    |
|-----------|--------|--------------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A |

**Table 5-196** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

**Table 5-197** Tag

| Parameter | Type   | Description                                                      |
|-----------|--------|------------------------------------------------------------------|
| key       | String | <b>Definition:</b> Specifies the tag key.<br><b>Range:</b> N/A   |
| value     | String | <b>Definition:</b> Specifies the tag value.<br><b>Range:</b> N/A |

**Table 5-198** EipInfo

| Parameter   | Type   | Description                                                   |
|-------------|--------|---------------------------------------------------------------|
| eip_id      | String | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A |
| eip_address | String | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A    |

| Parameter  | Type    | Description                                                                                                                                                           |
|------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_version | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

**Table 5-199** PublicIpInfo

| Parameter        | Type    | Description                                                                                                                                                       |
|------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| publicip_id      | String  | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A                                                                                                     |
| publicip_address | String  | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A                                                                                                        |
| ip_version       | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 address</li><li>• 6: IPv6 address</li></ul> |

**Table 5-200** GlobalEipInfo

| Parameter            | Type    | Description                                                                                                                                                           |
|----------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| global_eip_id        | String  | <b>Definition:</b> Specifies the ID of the global EIP.<br><b>Range:</b> N/A                                                                                           |
| global_eip_addresses | String  | <b>Definition:</b> Specifies the global EIP.<br><b>Range:</b> N/A                                                                                                     |
| ip_version           | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

**Table 5-201** AutoscalingRef

| Parameter        | Type    | Description                                                                                                                                                                                                                                              |
|------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable           | Boolean | <b>Definition:</b> Specifies whether to enable elastic scaling for the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> |
| min_l7_flavor_id | String  | <b>Definition:</b> Specifies the ID of the minimum elastic flavor at Layer 7.<br><b>Range:</b> N/A                                                                                                                                                       |

**Table 5-202** ProxyProtocolExtension

| Parameter        | Type                    | Description                                                                                                                 |
|------------------|-------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| vip_address      | String                  | <b>Definition:</b> Specifies the IPv4 address.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| ipv6_vip_address | String                  | <b>Definition:</b> Specifies the IPv6 address.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| extension        | <b>Extension</b> object | <b>Definition:</b> Specifies the proxy protocol extension.<br><b>Constraints:</b> N/A                                       |

**Table 5-203** Extension

| Parameter | Type   | Description                                                                                                                    |
|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------|
| ep_id     | String | <b>Definition:</b> Specifies the VPC endpoint ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter     | Type   | Description                                                                                                                            |
|---------------|--------|----------------------------------------------------------------------------------------------------------------------------------------|
| ep_service_id | String | <b>Definition:</b> Specifies the VPC endpoint service ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-204** CustomQosLimit

| Parameter | Type                  | Description                                                                            |
|-----------|-----------------------|----------------------------------------------------------------------------------------|
| l4        | <b>L4Limit</b> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors at Layer 4. |
| l7        | <b>L7Limit</b> object | <b>Definition:</b> Specifies the rate limit information of the ELB flavors at Layer 7. |

**Table 5-205** L4Limit

| Parameter  | Type    | Description                                                                                                |
|------------|---------|------------------------------------------------------------------------------------------------------------|
| connection | Integer | <b>Definition:</b> Specifies the maximum number of concurrent connections at Layer 4.<br><b>Range:</b> N/A |
| cps        | Integer | <b>Definition:</b> Specifies the maximum number of new connections at Layer 4.<br><b>Range:</b> N/A        |

**Table 5-206** L7Limit

| Parameter  | Type    | Description                                                                                                |
|------------|---------|------------------------------------------------------------------------------------------------------------|
| connection | Integer | <b>Definition:</b> Specifies the maximum number of concurrent connections at Layer 7.<br><b>Range:</b> N/A |
| cps        | Integer | <b>Definition:</b> Specifies the maximum number of new connections at Layer 7.<br><b>Range:</b> N/A        |

## Example Requests

Removing a load balancer from AZs

```
POST https://{ELB_Endpoint}/v3/060576782980d5762f9ec014dd2f1148/elb/loadbalancers/
9b663cd9-61e4-483d-b91f-92fc337fecec/availability-zone/batch-remove

{
 "availability_zone_list" : ["az2", "az3"]
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "request_id" : "6c63d0ac-7beb-451d-a3e0-a066beaea316",
 "loadbalancer" : {
 "id" : "9b663cd9-61e4-483d-b91f-92fc337fecec",
 "project_id" : "060576782980d5762f9ec014dd2f1148",
 "name" : "elb-reset",
 "description" : "",
 "vip_port_id" : null,
 "vip_address" : null,
 "admin_state_up" : true,
 "provisioning_status" : "ACTIVE",
 "operating_status" : "ONLINE",
 "listeners" : [],
 "pools" : [],
 "tags" : [],
 "provider" : "vlb",
 "created_at" : "2021-07-26T02:46:31Z",
 "updated_at" : "2021-07-26T02:46:59Z",
 "vpc_id" : "59cb11ef-f185-49ba-92af-0539e8ff9734",
 "enterprise_project_id" : "0",
 "availability_zone_list" : ["az1"],
 "ipv6_vip_address" : null,
 "ipv6_vip_virsubnet_id" : null,
 "ipv6_vip_port_id" : null,
 "publicips" : [{
 "publicip_id" : "0c07e04d-e2f9-41ad-b934-f58a65b6734d",
 "publicip_address" : "97.97.2.171",
 "ip_version" : 4
 }],
 "elb_virsubnet_ids" : ["7f817f9c-8731-4002-9e47-18cb8d431787"],
 "elb_virsubnet_type" : "dualstack",
 "ip_target_enable" : false,
 "autoscaling" : {
 "enable" : false,
 "min_l7_flavor_id" : ""
 },
 "frozen_scene" : null,
 "eips" : [{
 "eip_id" : "0c07e04d-e2f9-41ad-b934-f58a65b6734d",
 "eip_address" : "97.97.2.171",
 "ip_version" : 4
 }],
 "guaranteed" : true,
 "billing_info" : null,
 "l4_flavor_id" : "636ba721-935a-4ca5-a685-8076ce0e4148",
 "l4_scale_flavor_id" : null,
 "l7_flavor_id" : null,
 "l7_scale_flavor_id" : null,
 "vip_subnet_cidr_id" : null,
 "public_border_group" : "center",
 "protection_status" : "nonProtection",
 }
}
```

```
"protection_reason" : ""
}
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

#### Removing a load balancer from AZs

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchRemoveAvailableZonesSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();

 BatchRemoveAvailableZonesRequest request = new BatchRemoveAvailableZonesRequest();
 request.withLoadbalancerId("{loadbalancer_id}");
 BatchRemoveAvailableZonesRequestBody body = new BatchRemoveAvailableZonesRequestBody();
 List<String> listbodyAvailabilityZoneList = new ArrayList<>();
 listbodyAvailabilityZoneList.add("az2");
 listbodyAvailabilityZoneList.add("az3");
 body.withAvailabilityZoneList(listbodyAvailabilityZoneList);
 request.withBody(body);
 try {
 BatchRemoveAvailableZonesResponse response = client.batchRemoveAvailableZones(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 }
 }
}
```

```
 System.out.println(e.getErrorMsg());
 }
}
}
```

## Python

### Removing a load balancer from AZs

# coding: utf-8

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = BatchRemoveAvailableZonesRequest()
 request.loadbalancer_id = "{loadbalancer_id}"
 listAvailabilityZoneListbody = [
 "az2",
 "az3"
]
 request.body = BatchRemoveAvailableZonesRequestBody(
 availability_zone_list=listAvailabilityZoneListbody
)
 response = client.batch_remove_available_zones(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Removing a load balancer from AZs

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
```

```
risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.BatchRemoveAvailableZonesRequest{}
request.LoadbalancerId = "{loadbalancer_id}"
var listAvailabilityZoneListbody = []string{
 "az2",
 "az3",
}
request.Body = &model.BatchRemoveAvailableZonesRequestBody{
 AvailabilityZoneList: listAvailabilityZoneListbody,
}
response, err := client.BatchRemoveAvailableZones(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.16 Upgrading a Load Balancer

### Function

This API is used to upgrade a shared load balancer to a dedicated load balancer. Shared load balancers can be upgraded to dedicated load balancers, but dedicated load balancers cannot be downgraded to shared load balancers.



## Calling Method

For details, see [Calling APIs](#).

## URI

POST /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/upgrade

**Table 5-207** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the ID of the load balancer to be upgraded.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                      |

## Request Parameters

**Table 5-208** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-209** Request body parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| action       | Yes       | String | <b>Definition:</b> Specifies the action of an upgrade.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>start:</b> starts the upgrade. This action is supported only when <b>provisioning_status</b> of the load balancer is <b>ACTIVE</b>.</li><li>• <b>complete:</b> confirms the upgrade. This action is supported only when <b>provisioning_status</b> of the load balancer is <b>UPGRADED</b>. After the confirmation, the operation cannot be rolled back.</li><li>• <b>rollback:</b> rollbacks the upgrade. This action is supported only when <b>provisioning_status</b> of the load balancer is <b>UPGRADED</b>, <b>UPGRADE_FAILED</b>, or <b>ROLLBACK_FAILED</b>.</li></ul> <b>Default value:</b> N/A |
| l4_flavor_id | No        | String | <b>Definition:</b> Specifies the ID of a flavor at Layer 4. This parameter is valid only when <b>action</b> is <b>start</b> .<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is mandatory when the load balancer has a Layer 4 listener.</li><li>• <b>l4_flavor_id</b> and <b>l7_flavor_id</b> cannot be left blank at the same time.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                         |

| Parameter                           | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------|-----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>l7_flavor_id</code>           | No        | String           | <p><b>Definition:</b> Specifies the ID of a flavor at Layer 7. This parameter is valid only when <b>action</b> is <b>start</b>.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is mandatory when the load balancer has a Layer 7 listener.</li><li>• <b>l4_flavor_id</b> and <b>l7_flavor_id</b> cannot be left blank at the same time.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                      |
| <code>availability_zone_list</code> | No        | Array of strings | <p><b>Definition:</b> Specifies the list of AZs where the load balancers can be created. This parameter is valid and required when <b>action</b> is <b>start</b>.</p> <p>You can query the AZs by calling the API (GET <a href="https://{ELB_Endpoint}/v3/{project_id}/elb/availability-zones">https://{ELB_Endpoint}/v3/{project_id}/elb/availability-zones</a>). Select one or more AZs in the same set.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipv6_vip_virsubnet_id | No        | String | <p><b>Definition:</b> Specifies the ID of the IPv6 subnet where the load balancer works.</p> <p>You can query parameter <b>id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets).</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If you want to use the load balancer to distribute IPv6 requests, this parameter is required.</li><li>• The subnet defined by <b>ipv6_vip_virsubnet_id</b> must be in the VPC where the original shared load balancer works.</li><li>• IPv6 must be enabled for the subnet defined by <b>ipv6_vip_virsubnet_id</b>.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

| Parameter        | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipv6_vip_address | No        | String | <p><b>Definition:</b> Specifies the private IPv6 address of the load balancer.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The IP address must be from the IPv6 subnet where the load balancer resides and should not be used by other services.</li><li>• <b>ipv6_vip_virsubnet_id</b> is also required if <b>ipv6_vip_address</b> is specified.</li><li>• If only <b>ipv6_vip_virsubnet_id</b> is specified, the system will automatically assign a private IPv6 address to the load balancer.</li><li>• If neither <b>ipv6_vip_address</b> nor <b>ipv6_vip_virsubnet_id</b> is specified, no private IPv6 address will be assigned, and the value of <b>ipv6_vip_address</b> will be <b>null</b>.</li></ul> <p><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p> |

| Parameter         | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| elb_virsubnet_ids | No        | Array of strings | <b>Definition:</b> Specifies the network IDs of subnets on the downstream plane.<br><br>You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets).<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is valid only when <b>action</b> is <b>start</b>.</li><li>• If this parameter is not specified, the subnet IDs specified in <b>vip_subnet_cidr_id</b> will be used.</li><li>• The subnets must be in the VPC where the load balancer works.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

Status code: 202

Table 5-210 Response body parameters

| Parameter  | Type   | Description                                                                                                                                                                          |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| job_id     | String | <b>Definition:</b> Specifies the upgrade task ID.<br><b>Range:</b> N/A                                                                                                               |

## Example Requests

Upgrading a shared load balancer with **action** set to **start**

```
POST https://{ELB_Endpoint}/v3/060576798a80d5762fafc01a9b5eedc7/elb/loadbalancers/2c0b5b97-221b-4136-afc2-15d6570f31cb/upgrade
```

```
{
 "action": "start",
 "availability_zone_list": ["AZ1"],
 "elb_virsubnet_ids": ["5eddf5a-f45f-46d7-9f2b-70dc669feff9"],
 "l4_flavor_id": "f3c46bc2-1304-40b4-902b-cefae3858d17",
 "l7_flavor_id": "1b333094-bd31-4cb8-97e2-ea762fde3576"
}
```

## Example Responses

**Status code: 202**

Successful request.

```
{
 "request_id": "841e0da7-5835-4130-9a47-01688f34a154",
 "job_id": "062804a2-9e39-4dde-bd9b-271859ee312b"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Upgrading a shared load balancer with **action** set to **start**

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class UpgradeLoadbalancerSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 UpgradeLoadbalancerRequest request = new UpgradeLoadbalancerRequest();
 request.withLoadbalancerId("{loadbalancer_id}");
 UpgradeV3RequestBody body = new UpgradeV3RequestBody();
```

```
List<String> listbodyElbVirsubnetIds = new ArrayList<>();
listbodyElbVirsubnetIds.add("5eddf5a-f45f-46d7-9f2b-70dc669feff9");
List<String> listbodyAvailabilityZoneList = new ArrayList<>();
listbodyAvailabilityZoneList.add("AZ1");
body.withElbVirsubnetIds(listbodyElbVirsubnetIds);
body.withAvailabilityZoneList(listbodyAvailabilityZoneList);
body.withL7FlavorId("1b333094-bd31-4cb8-97e2-ea762fde3576");
body.withL4FlavorId("f3c46bc2-1304-40b4-902b-cefae3858d17");
body.withAction(UpgradeV3RequestBody.ActionEnum.fromValue("start"));
request.withBody(body);
try {
 UpgradeLoadbalancerResponse response = client.upgradeLoadbalancer(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrMsg());
}
}
```

## Python

### Upgrading a shared load balancer with **action** set to **start**

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = UpgradeLoadbalancerRequest()
 request.loadbalancer_id = "{loadbalancer_id}"
 listElbVirsubnetIdsbody = [
 "5eddf5a-f45f-46d7-9f2b-70dc669feff9"
]
 listAvailabilityZoneListbody = [
 "AZ1"
]
 request.body = UpgradeV3RequestBody(
 elb_virsubnet_ids=listElbVirsubnetIdsbody,
 availability_zone_list=listAvailabilityZoneListbody,
 l7_flavor_id="1b333094-bd31-4cb8-97e2-ea762fde3576",
```



```
l4_flavor_id="f3c46bc2-1304-40b4-902b-cefae3858d17",
action="start"
)
response = client.upgrade_loadbalancer(request)
print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Upgrading a shared load balancer with **action** set to **start**

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.UpgradeLoadbalancerRequest{}
 request.LoadbalancerId = "{loadbalancer_id}"
 var listElbVirsubnetIdsbody = []string{
 "5eddff5a-f45f-46d7-9f2b-70dc669feff9",
 }
 var listAvailabilityZoneListbody = []string{
 "AZ1",
 }
 l7FlavorIdUpgradeV3RequestBody := "1b333094-bd31-4cb8-97e2-ea762fde3576"
 l4FlavorIdUpgradeV3RequestBody := "f3c46bc2-1304-40b4-902b-cefae3858d17"
 request.Body = &model.UpgradeV3RequestBody{
 ElbVirsubnetIds: &listElbVirsubnetIdsbody,
 AvailabilityZoneList: &listAvailabilityZoneListbody,
 L7FlavorId: &l7FlavorIdUpgradeV3RequestBody,
 L4FlavorId: &l4FlavorIdUpgradeV3RequestBody,
 Action: model.GetUpgradeV3RequestBodyActionEnum().START,
 }
 response, err := client.UpgradeLoadbalancer(request)
 if err == nil {
 fmt.Printf("%v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

```
}
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 202         | Successful request. |

Error Codes

See [Error Codes](#).

5.6.17 Configuring User-defined Domain Name Resolution for a Load Balancer

Function

This API is used to configure user-defined domain name resolution for a load balancer.

Calling Method

For details, see [Calling APIs](#).

URI

POST /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/dns/user-defined-config

Table 5-211 Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

| Parameter       | Mandatory | Type   | Description                     |
|-----------------|-----------|--------|---------------------------------|
| loadbalancer_id | Yes       | String | Specifies the load balancer ID. |

## Request Parameters

**Table 5-212** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-213** Request body parameters

| Parameter    | Mandatory | Type                                   | Description                                                                                                                                                                                               |
|--------------|-----------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer | Yes       | UserDefinedDnsConfigRequestBody object | <b>Definition:</b> Specifies the request parameters for configuring user-defined domain name resolution for a load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-214** UserDefinedDnsConfigRequestBody

| Parameter                 | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                               |
|---------------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| public_domain_name_enable | No        | Boolean | <b>Definition:</b> Specifies whether to enable public domain name resolution.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Enable public domain name resolution.</li><li>• <b>false:</b> Disable public domain name resolution.</li></ul> <b>Default value:</b> false |

| Parameter                  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| public_dns_zone_name       | No        | String  | <b>Definition:</b> Specifies the public zone that will be used to generate public domain names for the load balancer.<br><b>Constraints:</b> Public domain names can only be generated based on public zones. If public domain name resolution is enabled, this parameter cannot be left blank. The public zone you specified must exist on the DNS console.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| public_dns_record_set_ttl  | No        | Integer | <b>Definition:</b> Specifies the cache duration of the public record set on a local DNS server. The longer the duration is, the slower the update takes effect. If your service address changes frequently, set TTL to a smaller value. Otherwise, set TTL to a larger value.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 2147483647<br><b>Default value:</b> 300                                         |
| private_domain_name_enable | No        | Boolean | <b>Definition:</b> Specifies whether to enable private domain name resolution.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Enable private domain name resolution.</li><li>• <b>false:</b> Disable private domain name resolution.</li></ul> <b>Default value:</b> false                                                                                   |

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| private_dns_zone_name | No        | String | <p><b>Definition:</b> Specifies the zone that will be used to generate private domain names for the load balancer.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is valid only when <b>private_domain_name_enable</b> is set to <b>true</b>.</li><li>• If <b>private_domain_name_enable</b> is set to true, this parameter cannot be left blank.</li><li>• The private zone you specified must exist on the DNS console.</li><li>• Both public and private zones can be used to generate private domain names for the load balancer. The zone type is defined by <b>private_dns_zone_type</b>.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |
| private_dns_zone_type | No        | String | <p><b>Definition:</b> Specifies the type of the zone that will be used to generate private domain names for the load balancer.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>private:</b> A private zone will be used.</li><li>• <b>public:</b> A public zone will be used.</li></ul> <p><b>Default value:</b> <b>private</b></p>                                                                                                                                                                                                                                                                                                                     |

| Parameter                  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| private_dns_record_set_ttl | No        | Integer | <b>Definition:</b> Specifies the cache duration of the private record set on a local DNS server. The longer the duration is, the slower the update takes effect. If your service address changes frequently, set TTL to a smaller value. Otherwise, set TTL to a larger value.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 2147483647<br><b>Default value:</b> 300 |

## Response Parameters

Status code: 200

Table 5-215 Response body parameters

| Parameter    | Type                         | Description                                                                                                      |
|--------------|------------------------------|------------------------------------------------------------------------------------------------------------------|
| loadbalancer | DnsConfigResponseBody object | <b>Definition:</b> Specifies the response parameters for configuring domain name resolution for a load balancer. |

Table 5-216 DnsConfigResponseBody

| Parameter        | Type                           | Description                                                                                                                                   |
|------------------|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| vip_address      | String                         | <b>Definition:</b> Specifies the virtual IPv4 address of the load balancer.                                                                   |
| ipv6_vip_address | String                         | <b>Definition:</b> Specifies the IPv6 address of the load balancer.<br><b>Constraints:</b>                                                    |
| eips             | Array of EipInfo objects       | <b>Definition:</b> Specifies the EIPs bound to the load balancer.<br><b>NOTE</b><br>This parameter has the same meaning as <b>publicips</b> . |
| global_eips      | Array of GlobalEipInfo objects | <b>Definition:</b> Specifies the global EIPs bound to the load balancer.                                                                      |

| Parameter                 | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| public_domain_name_enable | Boolean | <b>Definition:</b> Specifies whether to enable public domain name resolution.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Enable public domain name resolution.</li><li>• <b>false:</b> Disable public domain name resolution.</li></ul>                                                                                                                                                                 |
| public_dns_zone_name      | String  | <b>Definition:</b> Specifies the public zone that will be used to generate public domain names for the load balancer.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• Public domain names can only be generated based on public zones.</li><li>• If public domain name resolution is enabled, this parameter cannot be left blank.</li><li>• The public zone you specified must exist on the DNS console.</li></ul> |
| public_dns_zone_id        | String  | <b>Definition:</b><br>Specifies the ID of the public zone.<br>The ID can be obtained based on the public zone name.                                                                                                                                                                                                                                                                                                                |
| public_domain_name        | String  | <b>Definition:</b><br>Specifies the public domain names of the load balancer.<br><b>Constraints:</b><br>The public domain names are generated in the following format: {lb_id}.elb.{region_id}.{zone_name}                                                                                                                                                                                                                         |
| public_dns_record_set_ttl | Integer | <b>Definition:</b><br>Specifies the cache duration of the public record set on a local DNS server.<br>The longer the duration is, the slower the update takes effect.<br>If your service address changes frequently, set TTL to a smaller value. Otherwise, set TTL to a larger value.<br><b>Range:</b><br>1 to 2147483647<br><b>Default value:</b><br>300                                                                         |

| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| private_domain_name_enable | Boolean | <b>Definition:</b><br>Specifies whether to enable private domain resolution.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true</b>: Enable private domain name resolution.</li><li>• <b>false</b>: Disable private domain name resolution.</li></ul>                                                                                                                                                                                                                                                          |
| private_dns_zone_name      | String  | <b>Definition:</b><br>Specifies the zone that will be used to generate private domain names for the load balancer.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• Both public and private zones can be used to generate private domain names for the load balancer. The zone type is defined by <b>private_dns_zone_type</b>.</li><li>• If private domain name resolution is enabled, this parameter cannot be left blank.</li><li>• The private zone you specified must exist on the DNS console.</li></ul> |
| private_dns_zone_id        | String  | <b>Definition:</b><br>Specifies the ID of the private zone.<br><b>Constraints:</b><br>The ID can be obtained based on the private zone name.                                                                                                                                                                                                                                                                                                                                                                                 |
| private_domain_name        | String  | <b>Definition:</b> Specifies the private domain names of the load balancer.<br><b>Constraints:</b> The private domain names are generated in the following format:<br>{lb_id}-internal.elb.{region_id}.<br>{zone_name}                                                                                                                                                                                                                                                                                                       |
| private_dns_zone_type      | String  | <b>Definition:</b> Specifies the type of the zone that will be used to generate private domain names for the load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> <b>private</b> or <b>public</b><br><b>Default value:</b> <b>private</b>                                                                                                                                                                                                                                                                              |



| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| private_dns_record_set_ttl | Integer | <b>Definition:</b><br>Specifies the cache duration of the private record set on a local DNS server.<br><br>The longer the duration is, the slower the update takes effect.<br><br>If your service address changes frequently, set TTL to a smaller value. Otherwise, set TTL to a larger value.<br><b>Range:</b><br>1 to 2147483647<br><b>Default value:</b><br>300 |

**Table 5-217** EipInfo

| Parameter   | Type    | Description                                                                                                                                                           |
|-------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| eip_id      | String  | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A                                                                                                         |
| eip_address | String  | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A                                                                                                            |
| ip_version  | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

**Table 5-218** GlobalEipInfo

| Parameter            | Type   | Description                                                                 |
|----------------------|--------|-----------------------------------------------------------------------------|
| global_eip_id        | String | <b>Definition:</b> Specifies the ID of the global EIP.<br><b>Range:</b> N/A |
| global_eip_addresses | String | <b>Definition:</b> Specifies the global EIP.<br><b>Range:</b> N/A           |

| Parameter  | Type    | Description                                                                                                                                                           |
|------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_version | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

## Example Requests

Configuring user-defined domain name resolution for a load balancer

POST https://{ELB\_Endpoint}/v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/dns/user-defined-config

```
{
 "loadbalancer": {
 "public_dns_zone_name": "jpp.com",
 "public_domain_name_enable": true,
 "public_dns_record_set_ttl": 233333,
 "private_dns_zone_name": "jpp-internal.com",
 "private_domain_name_enable": true,
 "private_dns_record_set_ttl": 9999999,
 "private_dns_zone_type": "private"
 }
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "loadbalancer": [{
 "vip_address": "192.168.20.87"
 }, {
 "ipv6_vip_address": "2001:db8:a583:682::10"
 }, {
 "eips": null,
 "eip_id": "26000000-0000-0000-0000-000000000001",
 "eip_address": "10.185.106.199",
 "ip_version": 4
 }, {
 "global_eips": null,
 "global_eip_id": "26000000-0000-0000-0000-000000000001",
 "global_eip_address": "2001:db8:a583:682::11",
 "ip_version": 6
 }, {
 "private_domain_name_enable": true
 }, {
 "private_dns_zone_id": "8a186e6692d7f30d0192d8472fba0479"
 }, {
 "private_dns_zone_name": "test.private.com"
 }, {
 "private_domain_name": "10000000-0000-0000-0000-000000000001-internal.elb.zunei.test.private.com"
 }, {
 "private_dns_record_set_ttl": 3500
 }, {
 "public_domain_name_enable": true
 }, {
 "public_dns_zone_id": "9a186e6692d7f30d0192d8472fba0479"
 }, {

```

```
"public_dns_zone_name" : "test.public.com"
}, {
 "public_domain_name" : "10000000-0000-0000-0000-000000000001.elb.zune1.test.public.com"
}, {
 "public_dns_record_set_ttl" : 300
}]
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.18 Configuring System-defined Domain Name Resolution for a Load Balancer

### Function

This API is used to configure system-defined domain name resolution for a load balancer.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/dns/system-default-config

**Table 5-219** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

| Parameter       | Mandatory | Type   | Description                     |
|-----------------|-----------|--------|---------------------------------|
| loadbalancer_id | Yes       | String | Specifies the load balancer ID. |

## Request Parameters

**Table 5-220** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-221** Request body parameters

| Parameter    | Mandatory | Type                                                     | Description                                                                                                                    |
|--------------|-----------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer | Yes       | <a href="#">SystemDefaultDnsConfigRequestBody</a> object | <b>Definition:</b> Specifies the request parameters for configuring system-defined domain name resolution for a load balancer. |

**Table 5-222** SystemDefaultDnsConfigRequestBody

| Parameter                 | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| public_dns_record_set_ttl | No        | Integer | <b>Definition:</b> Specifies the cache duration of the public record set on a local DNS server. The longer the duration is, the slower the update takes effect. If your service address changes frequently, set TTL to a smaller value. Otherwise, set TTL to a larger value.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 2147483647<br><b>Default value:</b> 300 |

| Parameter                  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| private_domain_name_enable | No        | Boolean | <b>Definition:</b> Specifies whether to enable private domain name resolution.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Enable private domain name resolution.</li><li>• <b>false:</b> Disable private domain name resolution.</li></ul> <b>Default value:</b> false                                            |
| public_domain_name_enable  | No        | Boolean | <b>Definition:</b> Specifies whether to enable public domain name resolution.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Enable public domain name resolution.</li><li>• <b>false:</b> Disable public domain name resolution.</li></ul> <b>Default value:</b> false                                               |
| private_dns_record_set_ttl | No        | Integer | <b>Definition:</b> Specifies the cache duration of the private record set on a local DNS server. The longer the duration is, the slower the update takes effect. If your service address changes frequently, set TTL to a smaller value. Otherwise, set TTL to a larger value.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 2147483647<br><b>Default value:</b> 300 |

## Response Parameters

Status code: 200

**Table 5-223** Response body parameters

| Parameter    | Type                                         | Description                                                                                                      |
|--------------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| loadbalancer | <a href="#">DnsConfigResponseBody</a> object | <b>Definition:</b> Specifies the response parameters for configuring domain name resolution for a load balancer. |

**Table 5-224** DnsConfigResponseBody

| Parameter                 | Type                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------|------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vip_address               | String                                         | <b>Definition:</b> Specifies the virtual IPv4 address of the load balancer.                                                                                                                                                                                                                                                                                                                                                        |
| ipv6_vip_address          | String                                         | <b>Definition:</b> Specifies the IPv6 address of the load balancer.<br><b>Constraints:</b>                                                                                                                                                                                                                                                                                                                                         |
| eips                      | Array of <a href="#">EipInfo</a> objects       | <b>Definition:</b> Specifies the EIPs bound to the load balancer.<br><b>NOTE</b><br>This parameter has the same meaning as <b>publicips</b> .                                                                                                                                                                                                                                                                                      |
| global_eips               | Array of <a href="#">GlobalEipInfo</a> objects | <b>Definition:</b> Specifies the global EIPs bound to the load balancer.                                                                                                                                                                                                                                                                                                                                                           |
| public_domain_name_enable | Boolean                                        | <b>Definition:</b> Specifies whether to enable public domain name resolution.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Enable public domain name resolution.</li><li>• <b>false:</b> Disable public domain name resolution.</li></ul>                                                                                                                                                                 |
| public_dns_zone_name      | String                                         | <b>Definition:</b> Specifies the public zone that will be used to generate public domain names for the load balancer.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• Public domain names can only be generated based on public zones.</li><li>• If public domain name resolution is enabled, this parameter cannot be left blank.</li><li>• The public zone you specified must exist on the DNS console.</li></ul> |

| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                |
|----------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| public_dns_zone_id         | String  | <b>Definition:</b><br>Specifies the ID of the public zone.<br>The ID can be obtained based on the public zone name.                                                                                                                                                                                                                                        |
| public_domain_name         | String  | <b>Definition:</b><br>Specifies the public domain names of the load balancer.<br><b>Constraints:</b><br>The public domain names are generated in the following format:<br>{lb_id}.elb.{region_id}.{zone_name}                                                                                                                                              |
| public_dns_record_set_ttl  | Integer | <b>Definition:</b><br>Specifies the cache duration of the public record set on a local DNS server.<br>The longer the duration is, the slower the update takes effect.<br>If your service address changes frequently, set TTL to a smaller value. Otherwise, set TTL to a larger value.<br><b>Range:</b><br>1 to 2147483647<br><b>Default value:</b><br>300 |
| private_domain_name_enable | Boolean | <b>Definition:</b><br>Specifies whether to enable private domain resolution.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Enable private domain name resolution.</li><li>• <b>false:</b> Disable private domain name resolution.</li></ul>                                                                                        |

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| private_dns_zone_name | String | <b>Definition:</b><br>Specifies the zone that will be used to generate private domain names for the load balancer.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>Both public and private zones can be used to generate private domain names for the load balancer. The zone type is defined by <b>private_dns_zone_type</b>.</li><li>If private domain name resolution is enabled, this parameter cannot be left blank.</li><li>The private zone you specified must exist on the DNS console.</li></ul> |
| private_dns_zone_id   | String | <b>Definition:</b><br>Specifies the ID of the private zone.<br><b>Constraints:</b><br>The ID can be obtained based on the private zone name.                                                                                                                                                                                                                                                                                                                                                                           |
| private_domain_name   | String | <b>Definition:</b> Specifies the private domain names of the load balancer.<br><b>Constraints:</b> The private domain names are generated in the following format:<br>{lb_id}-internal.elb.{region_id}.<br>{zone_name}                                                                                                                                                                                                                                                                                                 |
| private_dns_zone_type | String | <b>Definition:</b> Specifies the type of the zone that will be used to generate private domain names for the load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> <b>private</b> or <b>public</b><br><b>Default value:</b> <b>private</b>                                                                                                                                                                                                                                                                        |



| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                         |
|----------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| private_dns_record_set_ttl | Integer | <b>Definition:</b><br>Specifies the cache duration of the private record set on a local DNS server.<br><br>The longer the duration is, the slower the update takes effect.<br><br>If your service address changes frequently, set TTL to a smaller value. Otherwise, set TTL to a larger value.<br><b>Range:</b><br>1 to 2147483647<br><b>Default value:</b><br>300 |

**Table 5-225** EipInfo

| Parameter   | Type    | Description                                                                                                                                                           |
|-------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| eip_id      | String  | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A                                                                                                         |
| eip_address | String  | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A                                                                                                            |
| ip_version  | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

**Table 5-226** GlobalEipInfo

| Parameter            | Type   | Description                                                                 |
|----------------------|--------|-----------------------------------------------------------------------------|
| global_eip_id        | String | <b>Definition:</b> Specifies the ID of the global EIP.<br><b>Range:</b> N/A |
| global_eip_addresses | String | <b>Definition:</b> Specifies the global EIP.<br><b>Range:</b> N/A           |

| Parameter  | Type    | Description                                                                                                                                                           |
|------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_version | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

## Example Requests

Configuring system-defined domain name resolution for a load balancer

POST https://{ELB\_Endpoint}/v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/dns/system-default-config

```
{
 "loadbalancer": {
 "public_domain_name_enable": true,
 "public_dns_record_set_ttl": 233333,
 "private_domain_name_enable": true,
 "private_dns_record_set_ttl": 9999999
 }
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "loadbalancer": [{
 "vip_address": "192.168.20.87"
 }, {
 "ipv6_vip_address": "2001:db8:a583:682::10"
 }, {
 "eips": null,
 "eip_id": "26000000-0000-0000-0000-000000000001",
 "eip_address": "10.185.106.199",
 "ip_version": 4
 }, {
 "global_eips": null,
 "global_eip_id": "26000000-0000-0000-0000-000000000001",
 "global_eip_address": "2001:db8:a583:682::11",
 "ip_version": 6
 }, {
 "private_domain_name_enable": true
 }, {
 "private_dns_zone_id": "8a186e6692d7f30d0192d8472fba0479"
 }, {
 "private_dns_zone_name": "test.private.com"
 }, {
 "private_domain_name": "10000000-0000-0000-0000-000000000001-internal.huaweicloud-elb.com"
 }, {
 "private_dns_record_set_ttl": 3500
 }, {
 "public_domain_name_enable": true
 }, {
 "public_dns_zone_id": "9a186e6692d7f30d0192d8472fba0479"
 }, {
 "public_dns_zone_name": "test.public.com"
 }, {
 "public_domain_name": "10000000-0000-0000-0000-000000000001.elb.huaweicloud-elb.com"
 }
]
```

```
}, {
 "public_dns_record_set_ttl" : 300
}]
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.19 Querying the Domain Name Resolution Information of a Load Balancer

### Function

This API is used to query the domain name resolution information of a load balancer.

Note: If neither public nor private domain name resolution is enabled for the load balancer, an empty list is returned.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/dns/ips

**Table 5-227** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

| Parameter       | Mandatory | Type   | Description                     |
|-----------------|-----------|--------|---------------------------------|
| loadbalancer_id | Yes       | String | Specifies the load balancer ID. |

## Request Parameters

**Table 5-228** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-229** Response body parameters

| Parameter | Type                                           | Description                                                          |
|-----------|------------------------------------------------|----------------------------------------------------------------------|
| ips       | Array of <a href="#">DnsIpResponse</a> objects | Specifies the domain name resolution information of a load balancer. |

**Table 5-230** DnsIpResponse

| Parameter | Type    | Description                                                                                                                                                                                                                                                                                                 |
|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | String  | Specifies the ID of domain name resolution configured for the IP address.                                                                                                                                                                                                                                   |
| enable    | Boolean | <b>Definition:</b> Specifies whether domain name resolution is enabled for the IP address.<br><b>Range:</b> <ul style="list-style-type: none"><li><b>true:</b> Domain name resolution is enabled for the IP address.</li><li><b>false:</b> Domain name resolution is disabled for the IP address.</li></ul> |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                   |
|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_address  | String | <b>Definition:</b> Specifies the IP address. It can be an IPv4 or IPv6 address.<br><b>Constraints:</b> The IP address must be a private or public IP address of the load balancer.                                                                                                                                            |
| type        | String | <b>Definition:</b> Specifies the IP address type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>vip</b>: private IP address</li><li>• <b>eip</b>: public IP address</li></ul>                                                                                                                                   |
| domain_name | String | <b>Definition:</b> Specifies the domain name that the IP address is mapped to.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If the IP address is a private IP address, the value is a private domain name.</li><li>• If the IP address is a public IP address, the value is a public domain name.</li></ul> |
| created_at  | String | Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                                                                                                                  |
| updated_at  | String | Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                                                                                                                    |

## Example Requests

Querying the domain name resolution information of a load balancer

```
GET https://{ELB_Endpoint}/v3/{project_id}/elb/loadbalancers/38278031-cfca-44be-81be-a412f618773b/dns/ips
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "ips": [{
 "enable": true,
 "type": "vip",
 "ip_address": "192.168.20.87",
 "domain_name": "10000000-0000-0000-0000-000000000001-internal.elb.zunei.test.private.com",
 "id": "10000000-0000-0000-0000-000000000001"
 }, {
 "enable": false,
```

```
"type" : "eip",
"ip_address" : "2001:db8:a583:682::10",
"domain_name" : "10000000-0000-0000-0000-000000000001.elb.zuneit.test.public.com",
"id" : "10000000-0000-0000-0000-000000000002"
}]
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.20 Enabling Domain Name Resolution for IP Addresses

### Function

This API is used to enable domain name resolution for IP addresses.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/dns/ips/batch-enable

**Table 5-231** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | Specifies the load balancer ID.                                                                                                                                                                                                                                                                            |

## Request Parameters

**Table 5-232** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-233** Request body parameters

| Parameter | Mandatory | Type                          | Description                                                                                                                                                               |
|-----------|-----------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ips       | Yes       | Array of <b>DnsIp</b> objects | <b>Definition:</b> Specifies the IP addresses you want to enable domain name resolution for.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-234** DnsIp

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                          |
|------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_address | No        | String | <b>Definition:</b> Specifies the IP address. It can be an IPv4 or IPv6 address.<br><b>Constraints:</b> The IP address must be a private or public IP address of the load balancer.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-235** Response body parameters

| Parameter | Type                                                   | Description                                                                                                                                                                                                                                                                        |
|-----------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ips       | Array of <a href="#">ListDnsIpResponseBody</a> objects | <b>Definition:</b> Specifies the domain name resolution information of a load balancer.<br><b>Constraints:</b> If neither public nor private domain name resolution is enabled for the load balancer, an empty list is returned.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-236** ListDnsIpResponseBody

| Parameter | Type                                           | Description                                                          |
|-----------|------------------------------------------------|----------------------------------------------------------------------|
| ips       | Array of <a href="#">DnsIpResponse</a> objects | Specifies the domain name resolution information of a load balancer. |

**Table 5-237** DnsIpResponse

| Parameter  | Type    | Description                                                                                                                                                                                                                                                                                                     |
|------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id         | String  | Specifies the ID of domain name resolution configured for the IP address.                                                                                                                                                                                                                                       |
| enable     | Boolean | <b>Definition:</b> Specifies whether domain name resolution is enabled for the IP address.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Domain name resolution is enabled for the IP address.</li><li>• <b>false:</b> Domain name resolution is disabled for the IP address.</li></ul> |
| ip_address | String  | <b>Definition:</b> Specifies the IP address. It can be an IPv4 or IPv6 address.<br><b>Constraints:</b> The IP address must be a private or public IP address of the load balancer.                                                                                                                              |



| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                   |
|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type        | String | <b>Definition:</b> Specifies the IP address type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>vip</b>: private IP address</li><li>• <b>eip</b>: public IP address</li></ul>                                                                                                                                   |
| domain_name | String | <b>Definition:</b> Specifies the domain name that the IP address is mapped to.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If the IP address is a private IP address, the value is a private domain name.</li><li>• If the IP address is a public IP address, the value is a public domain name.</li></ul> |
| created_at  | String | Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                                                                                                                  |
| updated_at  | String | Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                                                                                                                    |

## Example Requests

Enabling domain name resolution for IP addresses

POST https://{ELB\_Endpoint}/v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/dns/ips/batch-enable

```
{
 "ips": [{
 "ip_address": "192.168.20.87"
 }, {
 "ip_address": "2001:db8:a583:682::10"
 }]
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "ips": [{
 "enable": true,
 "type": "vip",
 "ip_address": "192.168.20.87",
 "domain_name": "10000000-0000-0000-0000-000000000001-internal.elb.zuneitest.private.com",
 "id": "10000000-0000-0000-0000-000000000001"
 }, {
 "enable": true,
 "type": "eip",

```

```
"ip_address" : "2001:db8:a583:682::10",
"domain_name" : "10000000-0000-0000-0000-000000000001.elb.zuneit.test.public.com",
"id" : "10000000-0000-0000-0000-000000000002"
}]
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.6.21 Disabling Domain Name Resolution for IP Addresses

### Function

This API is used to disable domain name resolution for IP addresses.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/dns/ips/batch-disable

**Table 5-238** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | Specifies the load balancer ID.                                                                                                                                                                                                                                                                            |

## Request Parameters

**Table 5-239** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-240** Request body parameters

| Parameter | Mandatory | Type                          | Description                                                                                                                                                                |
|-----------|-----------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ips       | Yes       | Array of <b>DnsIp</b> objects | <b>Definition:</b> Specifies the IP addresses you want to disable domain name resolution for.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-241** DnsIp

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                          |
|------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_address | No        | String | <b>Definition:</b> Specifies the IP address. It can be an IPv4 or IPv6 address.<br><b>Constraints:</b> The IP address must be a private or public IP address of the load balancer.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-242** Response body parameters

| Parameter | Type                                                   | Description                                                                                                                                                                                                                                                                        |
|-----------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ips       | Array of <a href="#">ListDnsIpResponseBody</a> objects | <b>Definition:</b> Specifies the domain name resolution information of a load balancer.<br><b>Constraints:</b> If neither public nor private domain name resolution is enabled for the load balancer, an empty list is returned.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-243** ListDnsIpResponseBody

| Parameter | Type                                           | Description                                                          |
|-----------|------------------------------------------------|----------------------------------------------------------------------|
| ips       | Array of <a href="#">DnsIpResponse</a> objects | Specifies the domain name resolution information of a load balancer. |

**Table 5-244** DnsIpResponse

| Parameter  | Type    | Description                                                                                                                                                                                                                                                                                                     |
|------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id         | String  | Specifies the ID of domain name resolution configured for the IP address.                                                                                                                                                                                                                                       |
| enable     | Boolean | <b>Definition:</b> Specifies whether domain name resolution is enabled for the IP address.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Domain name resolution is enabled for the IP address.</li><li>• <b>false:</b> Domain name resolution is disabled for the IP address.</li></ul> |
| ip_address | String  | <b>Definition:</b> Specifies the IP address. It can be an IPv4 or IPv6 address.<br><b>Constraints:</b> The IP address must be a private or public IP address of the load balancer.                                                                                                                              |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                   |
|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type        | String | <b>Definition:</b> Specifies the IP address type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>vip</b>: private IP address</li><li>• <b>eip</b>: public IP address</li></ul>                                                                                                                                   |
| domain_name | String | <b>Definition:</b> Specifies the domain name that the IP address is mapped to.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If the IP address is a private IP address, the value is a private domain name.</li><li>• If the IP address is a public IP address, the value is a public domain name.</li></ul> |
| created_at  | String | Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                                                                                                                  |
| updated_at  | String | Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                                                                                                                    |

## Example Requests

Disabling domain name resolution for IP addresses

POST https://{ELB\_Endpoint}/v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/dns/ips/batch-disable

```
{
 "ips": [{
 "ip_address": "192.168.20.87"
 }, {
 "ip_address": "2001:db8:a583:682::10"
 }]
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "ips": [{
 "enable": false,
 "type": "vip",
 "ip_address": "192.168.20.87",
 "domain_name": "10000000-0000-0000-0000-000000000001-internal.elb.zuneit.test.private.com",
 "id": "10000000-0000-0000-0000-000000000001"
 }, {
 "enable": false,
 "type": "eip",

```

```
"ip_address" : "2001:db8:a583:682::10",
"domain_name" : "10000000-0000-0000-0000-000000000001.elb.zuneit.test.public.com",
"id" : "10000000-0000-0000-0000-000000000002"
}]
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

# Certificate

## 5.7.1 Creating a Certificate

### Function

This API is used to add a certificate for an HTTPS, TLS, or QUIC listener. You can use a certificate from Cloud Certificate & Manager (CCM) or use your own certificate.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/certificates

**Table 5-245** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-246** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-247** Request body parameters

| Parameter   | Mandatory | Type                           | Description                                                                                        |
|-------------|-----------|--------------------------------|----------------------------------------------------------------------------------------------------|
| certificate | Yes       | CreateCertificateOption object | <b>Definition:</b> Specifies the parameters for creating a certificate.<br><b>Constraints:</b> N/A |

**Table 5-248** CreateCertificateOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | <b>Definition:</b> Specifies the administrative status of the certificate. This parameter does not take effect whether it is set to <b>true</b> or <b>false</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The certificate is available.</li><li>• <b>false:</b> The certificate is unavailable.</li></ul> <b>Default value:</b> true |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                  |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| certificate | No        | String | <b>Definition:</b> Specifies the certificate content.<br>It supports certificate chains with a maximum of 11 layers (including certificates and certificate chains).<br><b>Constraints:</b> N/A<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 65,536 characters.<br><b>Default value:</b> N/A |
| description | No        | String | <b>Definition:</b> Provides supplementary information about the certificate.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 255 characters.<br><b>Default value:</b> N/A                                                                                                                                                   |



| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain    | No        | String | <p><b>Definition:</b> Specifies the domain names used by the server certificate.</p> <p><b>Constraints:</b> This parameter will take effect only when <b>type</b> is set to <b>server</b>. (For other types of certificates, this parameter can be specified but does not take effect.)</p> <p><b>Range:</b> The value can contain 0 to 10,000 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 100 domain names are allowed.</p> <ul style="list-style-type: none"><li>• A common domain name consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit. Example: www.test.com.</li><li>• A wildcard domain name is a domain name that starts with *. Example: *.test.com</li></ul> <p><b>Default value:</b> N/A</p> |
| name      | No        | String | <p><b>Definition:</b> Specifies the certificate name.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> 0 to 255 characters.</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| private_key | No        | String | <p><b>Definition:</b> Specifies the private key of the server certificate.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is valid and mandatory only when <b>type</b> is set to <b>server</b> or <b>server_sm</b>.</li><li>• This parameter will be ignored if <b>type</b> is set to other values. The value must be PEM encoded and will not take effect.</li></ul> <p><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 8,192 characters.</p> <p><b>Default value:</b> N/A</p> |
| project_id  | No        | String | <p><b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.</p> <p><b>Default value:</b> N/A</p> <p><b>NOTE</b><br/>This parameter is invalid. The project ID in the URL is used.</p>                                                                                                                                |
| type        | No        | String | <p><b>Definition:</b> Specifies the certificate type.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>server</b>: server certificates</li><li>• <b>client</b> CA certificates</li><li>• <b>server_sm</b>: server SM certificates</li></ul> <p><b>Default value:</b> <b>server</b></p>                                                                                                                                                                                                         |

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | String | <b>Definition:</b> Specifies the ID of the enterprise project. If no enterprise project ID is specified during resource creation, 0 is returned, indicating that the resource belongs to the default enterprise project.<br><b>Constraints:</b> The enterprise project ID cannot be "", 0, or an enterprise project ID that does not exist.<br><b>Range:</b> N/A<br><b>Default value:</b> 0                                            |
| enc_certificate       | No        | String | <b>Definition:</b> Specifies the content of the server SM certificate.<br>It supports certificate chains with a maximum of 11 layers (including certificates and certificate chains).<br><b>Constraints:</b> This parameter is supported and mandatory only when <b>type</b> is set to <b>server_sm</b> .<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 65,536 characters.<br><b>Default value:</b> N/A |
| enc_private_key       | No        | String | <b>Definition:</b> Specifies the private key of the server SM certificate.<br><b>Constraints:</b> This parameter is supported and mandatory only when <b>type</b> is set to <b>server_sm</b> .<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 8,192 characters.<br><b>Default value:</b> N/A                                                                                                             |

| Parameter          | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| scm_certificate_id | No        | String | <b>Definition:</b> Specifies the ID of the certificate managed on Cloud Certificate & Manager (CCM).<br><b>Constraints:</b> The system records only the certificate ID but does not verify its existence on CCM. In addition, you need to update the content of the corresponding certificate on CCM to the related parameters ( <b>certificate</b> , <b>private_key</b> , <b>enc_certificate</b> , and <b>enc_private_key</b> ) of the current API.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| source             | No        | String | <b>Definition:</b> Specifies the source of the certificate.<br><b>Constraints:</b> none<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>scm:</b> certificates from CCM</li><li>• If this parameter is left blank, self-signed certificates will be used.</li></ul> <b>Default value:</b> <b>scm</b> if <b>scm_certificate_id</b> is not empty. Otherwise, this parameter is left blank by default.                                                                                         |
| protection_status  | No        | String | <b>Definition:</b> Specifies the protection status.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul> <b>Default value:</b> <b>nonProtection</b>                                                                                                                                                                      |

| Parameter         | Mandatory | Type   | Description                                                                                                                                                                                                                                   |
|-------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_reason | No        | String | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Constraints:</b> This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

Status code: 201

**Table 5-249** Response body parameters

| Parameter   | Type                          | Description                                                                                                                                                                          |
|-------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id  | String                        | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| certificate | <b>CertificateInfo</b> object | Specifies the certificate.                                                                                                                                                           |

**Table 5-250** CertificateInfo

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                             |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the certificate. This parameter does not take effect whether it is set to <b>true</b> or <b>false</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The certificate is available.</li><li>• <b>false:</b> The certificate is unavailable.</li></ul> |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| certificate | String | <b>Definition:</b> Specifies the certificate content.<br><br>It supports certificate chains with a maximum of 11 layers (including certificates and certificate chains).<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 65,536 characters.                                                                                                                                                                                                                                                                                                                                                                                                     |
| description | String | <b>Definition:</b> Provides supplementary information about the certificate.<br><b>Range:</b> 0 to 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| domain      | String | <b>Definition:</b> Specifies the domain names used by the server certificate.<br><b>Range:</b> The value can contain 0 to 10,000 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 100 domain names are allowed. <ul style="list-style-type: none"><li>• A common domain name consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit. Example: www.test.com.</li><li>• A wildcard domain name is a domain name that starts with *. Example: *.test.com</li></ul> |
| id          | String | <b>Definition:</b> Specifies the certificate ID.<br><b>Range:</b> The value consists of 32 digits and lowercase letters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| name        | String | <b>Definition:</b> Specifies the certificate name.<br><b>Range:</b> 0 to 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| private_key | String | <b>Definition:</b> Specifies the private key of the server certificate.<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 8,192 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Parameter          | Type   | Description                                                                                                                                                                                                                                                                          |
|--------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type               | String | <b>Definition:</b> Specifies the certificate type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>server</b>: server certificates</li><li>• <b>client</b> CA certificates</li><li>• <b>server_sm</b>: server SM certificates</li></ul>                                  |
| created_at         | String | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                         |
| updated_at         | String | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                           |
| expire_time        | String | <b>Definition:</b> Specifies the time when the certificate expires.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                     |
| project_id         | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.                                   |
| enc_certificate    | String | <b>Definition:</b> Specifies the content of the server SM certificate.<br>It supports certificate chains with a maximum of 11 layers (including certificates and certificate chains).<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 65536 characters. |
| enc_private_key    | String | <b>Definition:</b> Specifies the private key of the server SM certificate.<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 8,192 characters.                                                                                                            |
| scm_certificate_id | String | <b>Definition:</b> Specifies the ID of the certificate managed on Cloud Certificate & Manager (CCM).<br><b>Range:</b> N/A                                                                                                                                                            |

| Parameter                 | Type             | Description                                                                                                                                                                                                                                                                       |
|---------------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| common_name               | String           | <b>Definition:</b> Specifies the primary domain name of the certificate.<br><b>Range:</b> N/A                                                                                                                                                                                     |
| fingerprint               | String           | <b>Definition:</b> Specifies the fingerprint of the certificate.<br><b>Range:</b> N/A                                                                                                                                                                                             |
| subject_alternative_names | Array of strings | <b>Definition:</b> Specifies all the domain names of the certificate.<br><b>Range:</b> N/A                                                                                                                                                                                        |
| source                    | String           | <b>Definition:</b> Specifies the source of the certificate.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>scm:</b> certificates from CCM</li><li>• If this parameter is left blank, self-signed certificates will be used.</li></ul>                                |
| protection_status         | String           | <b>Definition:</b> Specifies the protection status.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul>                       |
| protection_reason         | String           | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Range:</b> N/A                                                                                                                                                                                         |
| enterprise_project_id     | String           | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |

## Example Requests

Creating a server certificate and specifying the private key used by the HTTPS listener

```
POST https://{ELB_Endpoint}/v3/{project_id}/elb/certificates
```

```
{
 "certificate": {
 "name": "My Certificate",
```



```
"type" : "server",
"private_key" : "-----BEGIN PRIVATE KEY-----
\nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBAgEAAoIBAQQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KCnX1nfzTvl2ksXITQ2o9BkpStnPe\ntB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nMD30gH6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lcq39buNplgDOWzEP5AqXt
\nCOFYn6RTH5SRug4hKNN7sT1eYMsIHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl\nZAPYUBkl/
0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwCRLU08k\nEo04Z9H/
AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\nfvCARftGgMaYWPSNCRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUsHfGZjv5OQB
\nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8SETq8YaXngBO6vES9LMhHkNKKr\nciu9YklnNEHu6uRJ5g/
eGGX3KQynTvVlhnOVGAJvJTXcoU6fm7gYdHAD6jk9lc9M\nnEGpfYI6AdHlwFZcT/
RNAxhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7Ale\nkrgruPtfV1vWklg
+bUFhgGaiAEYTPAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\nXUqgCZo8MKeV2jf2drlxRRwRL33SksQbzAQ/qrLdT7GP3sCGqvKxWY2FPdFyF8kx
\nGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjP7dt
\nJ7n8EzkRUNE6aIMHOFEEych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\nniWgTWHXPZxUQaYhpjXo6+IMl6DpExiDgBAkMzJGlvs7yQiYWU+wthAr9urbWYdGZ
\nlS6VjoTkF6r7VZoILXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU\nnxs40yldp6wKBgQC69Cp/
xUwTX7GdxQzEJctYiKnBHKcspAg38zf3bGSXU/jR4eB\nn1IVQhELGI9CbKSdzKM71GyElmix/
T7FnSHIWIho1qVo6AQyduNWNQAQD15pr8KAd\nnXGXAZZ1FQcb3KYa
+2fflERmazdOTwJYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak\nn/735uP20KKqhNehZpC2dJei7OilgRhCs/
dKASUXHSW4fptBnUxACYocDxtY4Vha\nnfl7FPMdvGl8ioYbvlHFh
+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\n7nLhA4R4lqm9lpV6SKegDUK4fxp9pPyodZPqBLLAoGBAkJd4wHW54PwD4Ctfk9o
\nnjHjWB7pQlUYpTZO9dm+4fpcMn9Okf43AE2yAOaAP94GdzdDJkxfciXKcsYr9lluk
\nnfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUlGKMWXzuEd\nn3fy
+1rCUwzOp9LSjtYf4ege\nn-----END PRIVATE KEY-----",
"certificate" : "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgICEREwDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nnb21wYW55IENBMB4XDTE4MDcwMjEzMDU0N1oXDTE4MTExNzEzMjU0N1owFDESMBAG
\nA1UEAwWJbG9yYWxob3N0MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCGKCAQEA\nn0FQGzi3ucTX
+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUXIHxCfCgp19Z3807yNpLF5\nnU0NqPQZKUrZz3rQeLN9mYiUTJZPutYIFDDbB8CtL
gV+eyU9yYJslWx/Bm5kWNPh9\nn7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/
W7JaS\nnIaZlsx+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylYKy4zgnv1tn/K
\nny09cxLKAFtgoZWQD2FAZJf9F7k1kYNwqlTz3CPLZUUn7yw3nkOOtLMI28IEv0Wy
\nYd7CMJQKs1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t\nnhwQKuUvJhwR/
AAABMBMGAA1UdJQQMMAoGCCSGAQUFBwMBMA0GCsGSIb3DQEBAQwA
\nA4IBAQA8lMQJxaTey7EjXtRSLVLEAMftAQPG6ijjNQuvIBQYUDauDT4W2XUZ5wAn
\nnjiOyQ83va672K1G9s8n6xIH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TKI6OoDa
\nnezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRLYlp1HMnl6hkjPk4PCZ
\nnwKnhao0dlScati9Cct3UzXSNJOSLalKdHerH08lqd+1BchScxChk0xNITn1HZZGml\nn
+vbmunok3A2luc14rnsrbcbkGyqGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ\nniYsGDVN+9QBd0eYUHce
+77s96i3l\nn-----END CERTIFICATE-----"
}
```

## Example Responses

**Status code: 201**

Successful request.

```
{
 "certificate" : {
 "private_key" : "-----BEGIN PRIVATE KEY-----
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBAgEAAoIBAQQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J
+B7kYwsMhRcgdcJ8KCnX1nfzTvl2ksXITQ2o9BkpStnPetB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rMMMD30gH6QoP3cq7PGWcuZKV7hjd1tjCT
QukwMvqV8lcq39buNplgDOWzEP5AqXtCOFYn6RTH5SRug4hKNN7sT1eYMsIHu7wtEBDKVgrLjOCe/
W2f8rLT1zEsoAW2ChlZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwCRLU08kEo04Z9H/
AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/
HlfvCARftGgMaYWPSNCRMXB7tPwpQu19esjz4Z/
cR2Je4fTLPrffGUsHfGZjv5OQBZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8SETq8YaXngBO6vES9LMhHkNK
Krciu9YklnNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvJTXcoU6fm7gYdHAD6jk9lc9MEGpfYI6AdHlwFZcT/
RNAxhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7AlekrgruPtfV1vWklg
+bUFhgGaiAEYTPAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CTXUqgCZo8MKeV2jf2drlxRRwRL33SksQbzAQ/
qrLdT7GP3sCGqvKxWY2FPdFyF8kxGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/
-----END PRIVATE KEY-----"
 }
}
```

```
fbwjP7dtJ7n8EzkRUNE6aIMHOFEEych/
PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLriWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7y
QiYWU
+wthAr9urbWYdGZIS6VjoTkF6r7VZoLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBUxs40yldp6w
KBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB1lVQhELGI9CbKSdzKM71GyElmix/
T7FnJSHIWIho1qVo6AQyduNWNQAQD15pr8KAdXGXAZZ1FQcb3KYa
+2fflERmazdOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak/735uP20KKqhNehZpC2dJei7OilgRhCS/
dKASUXHSW4fptBnUxACYocDxtY4Vhafi7FPMdvGI8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa
+2cFm1Agf7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9ojHjWB7pQLUYpT
ZO9dm
+4fpCMn9Okf43AE2yAOaAP94GdzdJkxfciXKcsYr9lIukfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO3
8a5gZaOm/BUIGKMWXzuEd3fy+1rCUwzOp9LSjtUYf4ege-----END PRIVATE KEY-----",
 "description" : "",
 "domain" : null,
 "created_at" : "2019-03-31T22:23:51Z",
 "expire_time" : "2045-11-17T13:25:47Z",
 "id" : "233a325e5e3e4ce8beeb320aa714cc12",
 "name" : "My Certificate",
 "certificate" : "-----BEGIN CERTIFICATE-----
MIIC4TCCAcmgAwIBAgICERewDQYJKoZIhvcNAQELBQAwFzEVMBMGGA1UEAxMMTXIDb21wYW55IENBMB4X
DTE4MDcwMjEzMTU0N1oXDTQ1MTExNzEzMTU0N1owFDESMBAGA1UEAwJbG9jYXVxOjB3N0MlIjANBgkqh
kiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA0FQGzi3ucTX+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUIHXCFcGp19Z3807yNpLF5U0NqPQZKUrZz3rQeLN9mYiUTJZPutYIFDDbB8CtIgV
+eyU9yYJslWx/Bm5kWNPh97B9Yu9pbbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/
W7jaSlAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/
Ky09cxLKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7yw3nkOOtLMI28IEv0WYyD7CMJQks1NPJBKNOGfR/
wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29thwQKuUvJhwR/
AAABMBMGGA1UdJQQMMAoGCCSGAQUFBwMBMA0GCsGSIb3DQEBCwUAA4IBAQA8IMQJxaTey7EjXtRLSVL
EAMftAQPG6jjjNQuvIBQYUDauDT4W2XUZ5wAnjiOyQ83va672K1G9s8n6xlH
+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDaezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPR
LYlp1HMnl6hkjPk4PCZwKnha0dlScati9CCt3UzXSNJOSLalKdHErH08lqd+1BchScxCfk0xNITn1HZZGml
+vbmunok3A2luc14rnsrbkGYqXGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZiYsGDVN+9QBd0eYUHe
+77s96i3l-----END CERTIFICATE-----",
 "admin_state_up" : true,
 "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
 "updated_at" : "2019-03-31T23:26:49Z",
 "type" : "server",
 "common_name" : "www.example.com",
 "fingerprint" : "869df7fcb441c2ef3fb9329437815972eeb1ef0e",
 "subject_alternative_names" : ["www.example.com"],
 "scm_certificate_id" : "",
 "source" : "",
 "protection_status" : "nonProtection",
 "protection_reason" : "",
 "enc_certificate" : "",
 "enc_private_key" : ""
},
 "request_id" : "98414965-856c-4be3-8a33-3e08432a222e"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Creating a server certificate and specifying the private key used by the HTTPS listener

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
```

```
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CreateCertificateSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 CreateCertificateRequest request = new CreateCertificateRequest();
 CreateCertificateRequestBody body = new CreateCertificateRequestBody();
 CreateCertificateOption certificatebody = new CreateCertificateOption();
 certificatebody.withCertificate("-----BEGIN CERTIFICATE-----
MIIC4TCCAcmgAwIBAgICEREWdQYJKoZIhvcNAQELBQAwFzEVMBMGGA1UEAxMMTXID
b21wYW55IENBMB4XDTE4MDcwMjEzMjU0N1oXDTQ1MTEExNzEzMjU0N1owFDESMBAG
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-----END CERTIFICATE-----")
 .withName("My Certificate")
 .withPrivateKey("-----BEGIN PRIVATE KEY-----
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XUqgCZo8MKev2jf2drlxRRwRl33SksQbzAQ/qrLd7GP3sCGqvkwWY2FPdFYf8kx
GcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSPH7JNF3Tm/JH/fbwjppj7dt
J7n8EzkRUNE6alMHOFEEych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
IwqTWHXPZxUQaYhpjXo6+LMI6DpExiDgBAkMzJGlvs7yQiyWU+wthAr9urbWYdGZ
IS6VjoTkF6r7VZoLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
xs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zf3bGSXU/jR4eB
1lVQhELG9CbKSDzKM71GyElmix/T7FnSHIwLho1qVo6AQyduNwNAQD15pr8KAd
XGXAZZ1FQcb3KYa+2ffIERmazdOTwYjZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
-----")
 .withPrivateKey("-----BEGIN PRIVATE KEY-----
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKggggSkAgEAAoIBAQDQVAbOLe5xNf4M
253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KcN1nfzTvl2ksXITQ2o9BkpStnPe
tB4s32ZiJRMlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
MD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lq39buNplgDOWzEP5AqXt
COFYn6RTH5SRug4hKNN7sT1eYMsIHu7wtEBDKVgrLjOCe/W2f8LT1zEsoAW2Chl
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fvCArftGgMaYWPNSCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUsHFgZjv5OQB
ZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
ciu9YklNNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
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XUqgCZo8MKev2jf2drlxRRwRl33SksQbzAQ/qrLd7GP3sCGqvkwWY2FPdFYf8kx
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IwqTWHXPZxUQaYhpjXo6+LMI6DpExiDgBAkMzJGlvs7yQiyWU+wthAr9urbWYdGZ
IS6VjoTkF6r7VZoLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
xs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zf3bGSXU/jR4eB
1lVQhELG9CbKSDzKM71GyElmix/T7FnSHIwLho1qVo6AQyduNwNAQD15pr8KAd
XGXAZZ1FQcb3KYa+2ffIERmazdOTwYjZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
-----")
 .withPrivateKey("-----BEGIN PRIVATE KEY-----
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKggggSkAgEAAoIBAQDQVAbOLe5xNf4M
253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KcN1nfzTvl2ksXITQ2o9BkpStnPe
tB4s32ZiJRMlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
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Eo04Z9H/AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
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ZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
ciu9YklNNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
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XUqgCZo8MKev2jf2drlxRRwRl33SksQbzAQ/qrLd7GP3sCGqvkwWY2FPdFYf8kx
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IwqTWHXPZxUQaYhpjXo6+LMI6DpExiDgBAkMzJGlvs7yQiyWU+wthAr9urbWYdGZ
IS6VjoTkF6r7VZoLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
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XGXAZZ1FQcb3KYa+2ffIERmazdOTwYjZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
-----")
 .withPrivateKey("-----BEGIN PRIVATE KEY-----
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKggggSkAgEAAoIBAQDQVAbOLe5xNf4M
253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KcN1nfzTvl2ksXITQ2o9BkpStnPe
tB4s32ZiJRMlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
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ZAPYUBkl/0XuTWrg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwCRLU08k
Eo04Z9H/AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
fvCArftGgMaYWPNSCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUsHFgZjv5OQB
ZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
ciu9YklNNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
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krguPtFv1vWklg+bUFhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
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/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
-----")
 .withPrivateKey("-----BEGIN PRIVATE KEY-----
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKggggSkAgEAAoIBAQDQVAbOLe5xNf4M
253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KcN1nfzTvl2ksXITQ2o9BkpStnPe
tB4s32ZiJRMlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
MD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lq39buNplgDOWzEP5AqXt
COFYn6RTH5SRug4hKNN7sT1eYMsIHu7wtEBDKVgrLjOCe/W2f8LT1zEsoAW2Chl
ZAPYUBkl/0XuTWrg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwCRLU08k
Eo04Z9H/AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
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krguPtFv1vWklg+bUFhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
XUqgCZo8MKev2jf2drlxRRwRl33SksQbzAQ/qrLd7GP3sCGqvkwWY2FPdFYf8kx
GcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSPH7JNF3Tm/JH/fbwjppj7dt
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IwqTWHXPZxUQaYhpjXo6+LMI6DpExiDgBAkMzJGlvs7yQiyWU+wthAr9urbWYdGZ
IS6VjoTkF6r7VZoLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
xs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zf3bGSXU/jR4eB
1lVQhELG9CbKSDzKM71GyElmix/T7FnSHIwLho1qVo6AQyduNwNAQD15pr8KAd
XGXAZZ1FQcb3KYa+2ffIERmazdOTwYjZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
-----")
 .withPrivateKey("-----BEGIN PRIVATE KEY-----
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKggggSkAgEAAoIBAQDQVAbOLe5xNf4M
2
```

```
fl7FPMdvGl8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMJrAoveLa+2cFm1Agf
7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54Pwd4Ctfk9o
jHjWB7pQLUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDJKxfciXKcsYr9Iluk
faoXgjkR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BULGKMWXzuEd
3fy+1rCUwzOp9LSjtYf4ege
-----END PRIVATE KEY-----")
 .withType(CreateCertificateOption.TypeEnum.fromValue("server"));
 body.withCertificate(certificatebody);
 request.withBody(body);
 try {
 CreateCertificateResponse response = client.createCertificate(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrMsg());
 }
 }
}
```

## Python

Creating a server certificate and specifying the private key used by the HTTPS listener

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateCertificateRequest()
 certificatebody = CreateCertificateOption(
 certificate="-----BEGIN CERTIFICATE-----
MIIC4TCCAcmgAwIBAgICEREwDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
b21wYW55IENBMB4XDTE4MDcwMjEzMDU0N1oXDTE4MDcwMjEzMDU0N1owFDESMBAG
A1UEAwwJbG9jaWVwXob3N0MIIIBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
0FQGzi3ucTX+DNud1p/b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5
U0NqPQZKUrZz3rQeLN9mYiUTJZPutYIFDDbB8CtIgV+eyU9yYJslWx/Bm5kWNPh9
7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
IAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/K
y09cxLKAFtgoZWQD2FAZJf9F7k1kYNwqITz3CPLZUUn7yw3nkOOtLMI28IEv0WY
Yd7CMJQkS1NPJBKNOGfR/wIDAQABoZowODAhBgNVHREEGjAYggpkb21haW4uY29t
-----END CERTIFICATE-----")
 request.set_certificatebody(certificatebody)
 client.create_certificate(request)
```

```
hwQKuUvJhwR/AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsQsIb3DQEBcwUA
A4IBAQA8lMQJxaTey7EjXtRLSVIEAMftAQPG6ijjNQuvIBQYUDauDT4W2XUZ5wAn
jiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKIOdI9I5I98TGKI6OoDa
ezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRLYLzp1HMnI6hkjPk4PCZ
wKnha0dlScati9Cct3UzXSNJOSLalKdHERH08lqd+1BchScxCfk0xNITn1HZZGml
+vbmunok3A2luc14rnsrbkGYqXGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ
iYsGDVN+9QBd0eYUHce+77s96i3l
```

```
-----END CERTIFICATE-----",
```

```
 name="My Certificate",
```

```
 private_key="-----BEGIN PRIVATE KEY-----
```

```
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBAKggwggSkAgEAAoIBAQDQVAbOLe5xNf4M
253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KCNx1nfzTvl2ksXLTQ2o9BkpStnPe
tB4s32ZiJRMlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
MD30glh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lcq39buNplgDOWzEP5AqXt
COFYn6RTH5SRug4hKNN7sT1eYMsIHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl
ZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfVLDeeQ460swjbgwS/RbJh3slwLRLU08k
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ciu9YkInNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvJTXcoU6fm7gYdHAD6jk9lc9M
EGpfYI6AdHwFZcT/RNAXhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7Ale
krquPtfV1vWklg+bUFhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
XUqgCZO8MKeV2jf2drlxRRwRL33SksQbzAQ/qRLd7GP3sCGqvKxWY2FPdFYf8kx
GcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjppP7dt
J7n8EzkRUNE6aIMHOFEEych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
iWgTWHXPZxUQaYhpjXo6+IMi6DpExiDgBAKzMzJGlvS7yQiYWU+wrthAr9urbWYdGZ
IS6VjoTkF6r7VZoiLXX0fBuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
xs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zf3bGSXU/jR4eB
1lVQhELGI9CbKSdzKM71GyElmix/T7FnJSHIWLho1qVo6AQyduNWnAQD15pr8KAd
XGXAZZ1FQcb3KYa+2fflERmazdOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
fl7FPMdvGl8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
7nLhA4R4lqm9lpV6SKegDUK4fxp9pPyodZPqBLLAoGBAjkD4wHW54PwD4Ctfk9o
jhjWB7pQLUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDjKxfciXKcsYr9lIuk
faoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd
3fy+1rCUwzOp9LSjtYf4ege
-----END PRIVATE KEY-----",
 type="server"
```

```
)
request.body = CreateCertificateRequestBody(
 certificate=certificatebody
)
```

```
response = client.create_certificate(request)
print(response)
```

```
except exceptions.ClientRequestException as e:
```

```
 print(e.status_code)
```

```
 print(e.request_id)
```

```
 print(e.error_code)
```

```
 print(e.error_msg)
```

## Go

Creating a server certificate and specifying the private key used by the HTTPS listener

```
package main
```

```
import (
```

```
 "fmt"
```

```
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
```

```
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
```

```
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
```

```
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
```

```
)
```

```
func main() {
```

```
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
```

```
// In this example, AK and SK are stored in environment variables for authentication. Before running this
example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.CreateCertificateRequest{
 certificateCertificate:= "-----BEGIN CERTIFICATE-----
MIIC4TCCAcmgAwIBAgICERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMMTXID
b21wYW55IENBMB4XDTE4MDcwMjEzMjU0N1oXDTE4MTExNzEzMjU0N1owFDESMBAG
A1UEAwJbG9jYXVxob3N0MIIlBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
0FQZgi3ucTX+DNud1p/b4XVM6I3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5
U0NqPQZKUzZ3rQeLN9mYiUTJZPutYIFDDbB8CtGv+eyU9yYjSlWx/Bm5kWNPh9
7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
IAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/K
y09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPLZUUn7yw3nkoOtLMI28IEv0Wy
Yd7CMJQKs1NPJBKNOGfR/wlDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
hwQKUuVJhwR/AAABMBMGA1UdJQMMAoGCCsGAQUFBwMBMA0GCSqGSIb3DQEBwUA
A4IBAQA8lMQJxaTey7EjXtRLSVIEAMftAQPG6jijNQuvIBQYUDauDT4W2XUZ5wAn
jiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
ezmzCwQYtHBMVQ4c7Ml8554Ft1mWst4dMAK2rzNYjvPRLYlp1HMnl6hkpK4PCZ
wKnHa0dlScati9Cct3UzXSNJOSLalKdHErH08lqd+1BchScxKfK0xNITn1HZZGml
+vbmunok3A2luc14rnsrbkGYqXGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ
iYsGDVN+9QBd0eYUHce+77s96i3l
-----END CERTIFICATE-----"
 nameCertificate:= "My Certificate"
 privateKeyCertificate:= "-----BEGIN PRIVATE KEY-----
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M
253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KCNX1nfzTvl2ksXITQ2o9BkpStnPe
tB4s32ZJRmIk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
MD30gLh6QoP3cq7PGWcuZKv7hjd1tjCTQukwMvqV8lCq39buNpIgDOWzEP5AqXt
COFYn6RTH5SRug4hKNN7s1eYMsLHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl
ZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwCRLU08k
Eo04Z9H/AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
fvCArftGgMaYWPSPNCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFgZjv5OQB
ZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
ciu9YklNNEHu6uRJ5g/eGgX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
EGpfYI6AdHlWfZcT/RNAXhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7Ale
krquPtfV1vWklg+bUFhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
XUqgCZ08MKeV2jf2drlxRRwRl33SksQbzAQ/qrlD7GP3sCGqvkwWY2FPdFYf8kx
GcCeZPcleZYCQAM41pjsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjppj7dt
J7n8EzkrUNE6aIMHOFEEych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
iWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7yQYiWUu+wthAr9urbWYdGZ
IS6VjoTkF6r7VZoILXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
xs40Yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zf3bGSXU/jR4eB
1lVQhELGI9CbKSdzKM71GyElmix/T7FnJSHIwlho1qVo6AQyduNWnAQD15pr8KAd
XGXAZZ1FQcb3KYa+2ffIERmazdOTwYjZ0tGqZnXkEeMdSLkmlCLRigWhGQKBgDak
/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
fl7FPMdvGl8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMJrAoveLa+2cFm1Agf
7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLaOGBAJkD4wHW54PwD4Ctfk9o
jHjWB7pQUYpTZO9dm+4fPMn9Okf43AE2yAOaAP94GdzdDjKxfciXKcsYr9IluK
faoXgjkR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BULGKMwXzuEd
3fy+1rCUwzOp9LSjtYf4ege
-----END PRIVATE KEY-----"
 typeCertificate:= model.GetCreateCertificateOptionTypeEnum().SERVER
 certificatebody := &model.CreateCertificateOption{
 Certificate: &certificateCertificate,
```

```
Name: &nameCertificate,
PrivateKey: &privateKeyCertificate,
Type: &typeCertificate,
}
request.Body = &model.CreateCertificateRequestBody{
 Certificate: certificatebody,
}
response, err := client.CreateCertificate(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 201         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.7.2 Querying Certificates

### Function

This API is used to query the certificates used by the load balancer.

### Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query.
- Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/certificates

**Table 5-251** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

**Table 5-252** Query Parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker    | No        | String  | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| limit     | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000                                                                                                                                                                                                                                                                  |



| Parameter    | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse | No        | Boolean          | <b>Definition:</b> Specifies whether to use reverse query.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true</b>: Query resources on the previous page.</li><li>• <b>false</b>: Query resources on the next page.</li></ul> <b>Default value:</b> false |
| id           | No        | Array of strings | <b>Definition:</b> Specifies the certificate ID.<br>Multiple IDs can be used for query in the format of <i>id=xxx&amp;id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                              |
| name         | No        | Array of strings | <b>Definition:</b> Specifies the certificate name.<br>Multiple names can be used for query in the format of <i>name=xxx&amp;name=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                      |

| Parameter      | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                           |
|----------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description    | No        | Array of strings | <b>Definition:</b> Provides supplementary information about the certificate.<br>Multiple descriptions can be used for query in the format of <i>description=xxx&amp;description=xx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                 |
| admin_state_up | No        | Boolean          | <b>Definition:</b> Specifies the administrative status of the certificate.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The certificate is available.</li><li>• <b>false:</b> The certificate is unavailable.</li></ul> <b>Default value:</b> N/A |
| domain         | No        | Array of strings | <b>Definition:</b> Specifies the domain names used by the server certificate.<br>Multiple domain names can be used for query in the format of <i>domain=xxx&amp;domain=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                         |

| Parameter          | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type               | No        | Array of strings | <b>Definition:</b> Specifies the certificate type.<br>Multiple types can be used for query in the format of <i>type=xxx&amp;type=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>server</b>: server certificates</li><li>• <b>client</b> CA certificates</li><li>• <b>server_sm</b>: server SM certificates</li></ul> <b>Default value:</b> N/A |
| scm_certificate_id | No        | Array of strings | <b>Definition:</b> Specifies the ID of the certificate managed on Cloud Certificate & Manager (CCM).<br>Multiple IDs can be used for query in the format of <i>scm_certificate_id=xxx&amp;scm_certificate_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                              |
| common_name        | No        | Array of strings | <b>Definition:</b> Specifies the primary domain name of the certificate.<br>Multiple domain names can be used for query in the format of <i>common_name=xxx&amp;common_name=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                               |

| Parameter         | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| fingerprint       | No        | Array of strings | <p><b>Definition:</b> Specifies the fingerprint of the certificate. Multiple fingerprints can be used for query in the format of <i>fingerprint=xxx&amp;fingerprint=xxx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                  |
| source            | No        | Array of strings | <p><b>Definition:</b> Specifies the source of the certificate. Multiple sources can be used for query in the format of <i>source=xxx&amp;source=xxx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>scm:</b> certificates from CCM</li> <li>• If this parameter is left blank, self-signed certificates will be used.</li> </ul> <p><b>Default value:</b> N/A</p>                                 |
| protection_status | No        | Array of strings | <p><b>Definition:</b> Specifies the protection status. Multiple statuses can be used for query in the format of <i>protection_status=xxx&amp;protection_status=xxx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li>• <b>nonProtection:</b> The resource is not protected.</li> <li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li> </ul> <p><b>Default value:</b> N/A</p> |

| Parameter             | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_reason     | No        | Array of strings | <b>Definition:</b> Specifies why modification protection is enabled.<br><br>Multiple values can be used for query in the format of <i>protection_reason=xxx&amp;protection_reason=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| enterprise_project_id | No        | Array of strings | <b>Definition:</b> Specifies the ID of the enterprise project.<br><br>Multiple values can be used for query in the format of: <i>enterprise_project_id=xxx&amp;enterprise_project_id=xxx</i> .<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If <b>enterprise_project_id</b> is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:certificates:list</b> permission must be assigned to the user group.</li><li>• If <b>enterprise_project_id</b> is specified, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:certificates:list</b> permission are queried.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-253** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200**Table 5-254** Response body parameters

| Parameter    | Type                                    | Description                                                                                                                                                                          |
|--------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id   | String                                  | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| page_info    | <b>PageInfo</b> object                  | <b>Definition:</b> Specifies the pagination information.                                                                                                                             |
| certificates | Array of <b>CertificateInfo</b> objects | <b>Definition:</b> Lists the certificates.                                                                                                                                           |

**Table 5-255** PageInfo

| Parameter       | Type   | Description                                                                                                                                                                                                                          |
|-----------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |

| Parameter     | Type    | Description                                                                                                                                                         |
|---------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| next_marker   | String  | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A |
| current_count | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A                                                               |

**Table 5-256** CertificateInfo

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                             |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the certificate. This parameter does not take effect whether it is set to <b>true</b> or <b>false</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The certificate is available.</li><li>• <b>false:</b> The certificate is unavailable.</li></ul> |
| certificate    | String  | <b>Definition:</b> Specifies the certificate content.<br>It supports certificate chains with a maximum of 11 layers (including certificates and certificate chains).<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 65,536 characters.                                                                    |
| description    | String  | <b>Definition:</b> Provides supplementary information about the certificate.<br><b>Range:</b> 0 to 255 characters.                                                                                                                                                                                                                      |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain      | String | <b>Definition:</b> Specifies the domain names used by the server certificate.<br><b>Range:</b> The value can contain 0 to 10,000 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 100 domain names are allowed. <ul style="list-style-type: none"><li>• A common domain name consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit. Example: www.test.com.</li><li>• A wildcard domain name is a domain name that starts with *. Example: *.test.com</li></ul> |
| id          | String | <b>Definition:</b> Specifies the certificate ID.<br><b>Range:</b> The value consists of 32 digits and lowercase letters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| name        | String | <b>Definition:</b> Specifies the certificate name.<br><b>Range:</b> 0 to 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| private_key | String | <b>Definition:</b> Specifies the private key of the server certificate.<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 8,192 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| type        | String | <b>Definition:</b> Specifies the certificate type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>server:</b> server certificates</li><li>• <b>client</b> CA certificates</li><li>• <b>server_sm:</b> server SM certificates</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                          |
| created_at  | String | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |



| Parameter                 | Type             | Description                                                                                                                                                                                                                                                                          |
|---------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at                | String           | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                           |
| expire_time               | String           | <b>Definition:</b> Specifies the time when the certificate expires.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                     |
| project_id                | String           | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.                                   |
| enc_certificate           | String           | <b>Definition:</b> Specifies the content of the server SM certificate.<br>It supports certificate chains with a maximum of 11 layers (including certificates and certificate chains).<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 65536 characters. |
| enc_private_key           | String           | <b>Definition:</b> Specifies the private key of the server SM certificate.<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 8,192 characters.                                                                                                            |
| scm_certificate_id        | String           | <b>Definition:</b> Specifies the ID of the certificate managed on Cloud Certificate & Manager (CCM).<br><b>Range:</b> N/A                                                                                                                                                            |
| common_name               | String           | <b>Definition:</b> Specifies the primary domain name of the certificate.<br><b>Range:</b> N/A                                                                                                                                                                                        |
| fingerprint               | String           | <b>Definition:</b> Specifies the fingerprint of the certificate.<br><b>Range:</b> N/A                                                                                                                                                                                                |
| subject_alternative_names | Array of strings | <b>Definition:</b> Specifies all the domain names of the certificate.<br><b>Range:</b> N/A                                                                                                                                                                                           |

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                       |
|-----------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| source                | String | <b>Definition:</b> Specifies the source of the certificate.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>scm:</b> certificates from CCM</li><li>• If this parameter is left blank, self-signed certificates will be used.</li></ul>                                |
| protection_status     | String | <b>Definition:</b> Specifies the protection status.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul>                       |
| protection_reason     | String | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Range:</b> N/A                                                                                                                                                                                         |
| enterprise_project_id | String | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |

## Example Requests

Querying certificates

```
GET https://{ELB_Endpoint}/v3/{project_id}/elb/certificates
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "certificates" : [{
 "id" : "5494a835d88f40ff940554992f2f04d4",
 "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
 "name" : "https_certificate",
 "type" : "server",
 "domain" : null,
 "description" : "description for certificatehhhh",
 "private_key" : "-----BEGIN PRIVATE KEY-----
MIIEvglBADANBgkqhkiG9w0BAQEFAASCBAKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J
+B7kYwsMhRcgdcJ8KCnX1nfzTvl2ksXlTQ2o9BkpStnPstB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rMMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCT
```

```
QukwMvqV8lcq39buNplgDOWzEP5AzqXtCOFYn6RTH5SRug4hKNN7sT1eYMsIHu7wtEBDKVgrLjOCe/
W2f8rLT1zEsoAW2ChZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfVLDeeQ460swjbgwS/RbJh3slwICRLU08kEo04Z9H/
AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/
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"source" : "",
"protection_status" : "nonProtection",
"protection_reason" : "",
"enc_certificate" : "",
"enc_private_key" : ""
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"certificate" : "-----BEGIN CERTIFICATE-----
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"source" : "",
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}, {
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 "common_name" : "www.example.com",
 "fingerprint" : "869df7fcb441c2ef3fb9329437815972eeb1ef0e",
 "subject_alternative_names" : ["www.example.com"],
 "scm_certificate_id" : "",
 "source" : "",
 "protection_status" : "nonProtection",
 "protection_reason" : "",
 "enc_certificate" : "",
 "enc_private_key" : ""
}],
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 "current_count" : 3
},
"request_id" : "a27e7ae6-d901-4ec2-8e66-b8a1413819ad"
}

```

## SDK Sample Code

The SDK sample code is as follows.

# Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListCertificatesSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project id}";
```

```
ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
ListCertificatesRequest request = new ListCertificatesRequest();
try {
 ListCertificatesResponse response = client.listCertificates(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ListCertificatesRequest()
 response = client.list_certificates(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main
```

```
import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ListCertificatesRequest{}
 response, err := client.ListCertificates(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.7.3 Querying the Details of a Certificate

### Function

This API is used to query the details of a certificate used by the load balancer.

## Calling Method

For details, see [Calling APIs](#).

## URI

GET /v3/{project\_id}/elb/certificates/{certificate\_id}

**Table 5-257** Path Parameters

| Parameter      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id     | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| certificate_id | Yes       | String | Specifies a certificate ID.                                                                                                                                                                                                                                                                                |

## Request Parameters

**Table 5-258** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

Status code: 200



**Table 5-259** Response body parameters

| Parameter   | Type                          | Description                                                                                                                                                                          |
|-------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id  | String                        | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| certificate | <b>CertificateInfo</b> object | <b>Definition:</b> Specifies the certificate.                                                                                                                                        |

**Table 5-260** CertificateInfo

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                             |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the certificate. This parameter does not take effect whether it is set to <b>true</b> or <b>false</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The certificate is available.</li><li>• <b>false:</b> The certificate is unavailable.</li></ul> |
| certificate    | String  | <b>Definition:</b> Specifies the certificate content.<br>It supports certificate chains with a maximum of 11 layers (including certificates and certificate chains).<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 65,536 characters.                                                                    |
| description    | String  | <b>Definition:</b> Provides supplementary information about the certificate.<br><b>Range:</b> 0 to 255 characters.                                                                                                                                                                                                                      |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain      | String | <b>Definition:</b> Specifies the domain names used by the server certificate.<br><b>Range:</b> The value can contain 0 to 10,000 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 100 domain names are allowed. <ul style="list-style-type: none"><li>• A common domain name consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit. Example: www.test.com.</li><li>• A wildcard domain name is a domain name that starts with *. Example: *.test.com</li></ul> |
| id          | String | <b>Definition:</b> Specifies the certificate ID.<br><b>Range:</b> The value consists of 32 digits and lowercase letters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| name        | String | <b>Definition:</b> Specifies the certificate name.<br><b>Range:</b> 0 to 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| private_key | String | <b>Definition:</b> Specifies the private key of the server certificate.<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 8,192 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| type        | String | <b>Definition:</b> Specifies the certificate type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>server:</b> server certificates</li><li>• <b>client</b> CA certificates</li><li>• <b>server_sm:</b> server SM certificates</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                          |
| created_at  | String | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Parameter                 | Type             | Description                                                                                                                                                                                                                                                                          |
|---------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at                | String           | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                           |
| expire_time               | String           | <b>Definition:</b> Specifies the time when the certificate expires.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                     |
| project_id                | String           | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.                                   |
| enc_certificate           | String           | <b>Definition:</b> Specifies the content of the server SM certificate.<br>It supports certificate chains with a maximum of 11 layers (including certificates and certificate chains).<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 65536 characters. |
| enc_private_key           | String           | <b>Definition:</b> Specifies the private key of the server SM certificate.<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 8,192 characters.                                                                                                            |
| scm_certificate_id        | String           | <b>Definition:</b> Specifies the ID of the certificate managed on Cloud Certificate & Manager (CCM).<br><b>Range:</b> N/A                                                                                                                                                            |
| common_name               | String           | <b>Definition:</b> Specifies the primary domain name of the certificate.<br><b>Range:</b> N/A                                                                                                                                                                                        |
| fingerprint               | String           | <b>Definition:</b> Specifies the fingerprint of the certificate.<br><b>Range:</b> N/A                                                                                                                                                                                                |
| subject_alternative_names | Array of strings | <b>Definition:</b> Specifies all the domain names of the certificate.<br><b>Range:</b> N/A                                                                                                                                                                                           |

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                       |
|-----------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| source                | String | <b>Definition:</b> Specifies the source of the certificate.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>scm:</b> certificates from CCM</li><li>• If this parameter is left blank, self-signed certificates will be used.</li></ul>                                |
| protection_status     | String | <b>Definition:</b> Specifies the protection status.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul>                       |
| protection_reason     | String | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Range:</b> N/A                                                                                                                                                                                         |
| enterprise_project_id | String | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |

## Example Requests

Querying the details of a certificate

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/certificates/
5494a835d88f40ff940554992f2f04d4
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "certificate": {
 "id": "5494a835d88f40ff940554992f2f04d4",
 "project_id": "99a3fff0d03c428eac3678da6a7d0f24",
 "name": "https_certificatekkkk",
 "type": "server",
 "domain": null,
 "description": "description for certificatehhhh",
 "private_key": "-----BEGIN PRIVATE KEY-----
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J
+B7kYwsMhRcgdcJ8KCnX1nfzTvl2ksXITQ2o9BkpStnPetB4s32ZiJRMlk
```

```
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rMMD30gH6QoP3cq7PGWcuZKV7hjd1tjCT
QukwMvqV8lcq39buNplgDOWzEP5AqzXtCOFYn6RTH55Rug4hKNN7sT1eYMsIHu7wtEBDKVgrLjOCe/
W2f8rLT1zEsoAW2ChLZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwCRLU08kEo04Z9H/
AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/
HlfvCArftGgMaYWPNSCJRMXB7tPwpQu19esjz4Z/
cR2Je4tLPrffGUsHfGzjv5OQBZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNK
Krciu9YklnNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9MEGpfYl6AdHlwFZcT/
RNAxhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7AlekrquPtFv1vWklg
+bUfHfgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CTXUqgCZo8MKeV2jf2drlxRRwRL33SksQbzAQ/
qrLdT7GP3sCGqvkxWY2FPdFYf8kxGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/
fbwjP7dtU7n8EzkRUNE6aIMHOFEEych/
PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLriWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7y
QiYWU
+wthAr9urbWYdGZIS6VjoTkF6r7VZolLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBUxs40yldp6w
KBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB1lVQhELGI9CbKsdzKM71GyElmix/
T7FnJSHIWIho1qVo6AQyduNWnAQD15pr8KAdXGXAzz1FQcb3KYa
+2fflERmazdOTwJYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak/735uP20KKqhNehZpC2dJei7OilRhCs/
dKASUXHSW4fptBnUxACYocDxtY4VhafI7FPMdvGL8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa
+2cFm1Agf7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLaOGBAJKD4wHW54PwD4Ctfk9ojHjWB7pQLUYpT
ZO9dm
+4fpCMn9Okf43AE2yAOaAP94GdzdDJKxfciXKcsYr9IluKfaoXgjKR7p1zERiWzUfF63SB4aiyX1H7IX0MwHDZQO3
8a5gZaOm/BUIGKMWXzuEd3fy+1rCUwzOp9LSjtYf4ege-----END PRIVATE KEY-----",
"certificate" : "-----BEGIN CERTIFICATE-----
MIIC4TCCACmgAwIBAgICEREwDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXlDb21wYW55IENBMB4X
DTE4MDcwMjEzMjU0N1oXDTQ1MTEzNzEzMjU0N1owFDESMBAGA1UEAwwjbG9jYWxob3N0M0M0IIBjANBgkq
kiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA0FQZi3ucTX+DNud1p/
b4XVM6I3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5U0NqPQZKUrZz3rQeLn9mYiUTJZPutYlFDDbB8CtIgV
+eyU9yYJslWx/Bm5kWNPh97B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/
W7jaSiAazsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKY4zgnv1tn/
Ky09cxLKAFtgoZWQD2FAZJf97k1kYNwqlTz3CPILZUUn7yw3nkOOTLMI28IEv0WYyD7CMJQkS1NPJBKNOGfR/
wiDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29thwQKuUvJhwR/
AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBCwUAA4IBAQA8IMQJxaTey7EjXtRLSVI
EAMftAQPG6jjjNQuvIBQYUDauDT4W2XUZ5wAnjiOyQ83va672K1G9s8n6xlH
+xxwdSNnozaKzC87vwSeZKIOdl9I5I98TGKl6OoDaezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPR
LYlp1HMnl6hkjPk4PCZwKnha0dlScati9Cct3UzXSNJOSLalKdHErH08lqd+1BchScxCfk0xNITn1HZZGml
+vbmunok3A2luc14rnsrbkGYqxGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZiYsGDVN+9QBd0eYUHce
+77s96i3I-----END CERTIFICATE-----",
"admin_state_up" : true,
"created_at" : "2019-03-31T22:23:51Z",
"updated_at" : "2019-03-31T23:26:49Z",
"expire_time" : "2045-11-17T13:25:47Z",
"common_name" : "www.example.com",
"fingerprint" : "869df7fcb441c2ef3fb9329437815972eeb1ef0e",
"subject_alternative_names" : ["www.example.com"],
"scm_certificate_id" : "",
"source" : "",
"protection_status" : "nonProtection",
"protection_reason" : "",
"enc_certificate" : "",
"enc_private_key" : ""
},
"request_id" : "a94af450-5ac0-4185-946c-27a59a16c1d3"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
```

```
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowCertificateSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowCertificateRequest request = new ShowCertificateRequest();
 request.withCertificateId("{certificate_id}");
 try {
 ShowCertificateResponse response = client.showCertificate(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.getenv("CLOUD_SDK_AK")
 sk = os.getenv("CLOUD_SDK_SK")
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
```

```
.build()

try:
 request = ShowCertificateRequest()
 request.certificate_id = "{certificate_id}"
 response = client.show_certificate(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ShowCertificateRequest{}
 request.CertificateId = "{certificate_id}"
 response, err := client.ShowCertificate(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.7.4 Updating a Certificate

### Function

This API is used to update a certificate used by the load balancer. You can update the certificate content and private key, but not the certificate type.

Note: Updating a certificate will affect the associated listeners.

### Constraints

If a certificate with a domain name is used by a listener, the domain name cannot be updated to an empty string (""), and the system returns the 409 Conflict status code.

### Calling Method

For details, see [Calling APIs](#).

### URI

PUT /v3/{project\_id}/elb/certificates/{certificate\_id}

**Table 5-261** Path Parameters

| Parameter      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| certificate_id | Yes       | String | Specifies a certificate ID.                                                                                                                                                                                                                                                                                |
| project_id     | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |



## Request Parameters

**Table 5-262** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-263** Request body parameters

| Parameter   | Mandatory | Type                                           | Description                                                                                        |
|-------------|-----------|------------------------------------------------|----------------------------------------------------------------------------------------------------|
| certificate | Yes       | <a href="#">UpdateCertificateOption</a> object | <b>Definition:</b> Specifies the parameters for updating a certificate.<br><b>Constraints:</b> N/A |

**Table 5-264** UpdateCertificateOption

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                 |
|-------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| certificate | No        | String | <b>Definition:</b> Specifies the certificate content.<br>It supports certificate chains with a maximum of 11 layers (including certificates and certificate chains).<br><b>Constraints:</b> N/A<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 65536 characters.<br><b>Default value:</b> N/A |
| description | No        | String | <b>Definition:</b> Provides supplementary information about the certificate.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 255 characters.<br><b>Default value:</b> N/A                                                                                                                                                  |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name        | No        | String | <b>Definition:</b> Specifies the certificate name.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 255 characters.<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| private_key | No        | String | <b>Definition:</b> Specifies the private key of the server certificate.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 8,192 characters.<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| domain      | No        | String | <b>Definition:</b> Specifies the domain names used by the server certificate.<br><b>Constraints:</b> This parameter will take effect only when <b>type</b> is set to <b>server</b> . (For other types of certificates, this parameter can be specified but does not take effect.)<br><b>Range:</b> The value can contain 0 to 10,000 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 100 domain names are allowed. <ul style="list-style-type: none"><li>• A common domain name consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit. Example: www.test.com.</li><li>• A wildcard domain name is a domain name that starts with *. Example: *.test.com</li></ul> <b>Default value:</b> N/A |

| Parameter          | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enc_certificate    | No        | String | <b>Definition:</b> Specifies the content of the server SM certificate.<br><br>It supports certificate chains with a maximum of 11 layers (including certificates and certificate chains).<br><b>Constraints:</b> This parameter is supported only when <b>type</b> is set to <b>server_sm</b> .<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 65,536 characters.<br><b>Default value:</b> N/A                                                                           |
| enc_private_key    | No        | String | <b>Definition:</b> Specifies the private key of the server SM certificate.<br><b>Constraints:</b> This parameter is supported only when <b>type</b> is set to <b>server_sm</b> .<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 8,192 characters.<br><b>Default value:</b> N/A                                                                                                                                                                                           |
| scm_certificate_id | No        | String | <b>Definition:</b> Specifies the ID of the certificate managed on Cloud Certificate & Manager (CCM).<br><b>Constraints:</b> The system records only the certificate ID but does not verify its existence on CCM. In addition, you need to update the content of the corresponding certificate on CCM to the related parameters ( <b>certificate</b> , <b>private_key</b> , <b>enc_certificate</b> , and <b>enc_private_key</b> ) of the current API.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter         | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                      |
|-------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| source            | No        | String | <b>Definition:</b> Specifies the source of the certificate.<br><b>Constraints:</b> none<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>scm:</b> certificates from CCM</li><li>• If this parameter is left blank, self-signed certificates will be used.</li></ul> <b>Default value:</b> N/A         |
| protection_status | No        | String | <b>Definition:</b> Specifies the protection status.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul> <b>Default value:</b> N/A |
| protection_reason | No        | String | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Constraints:</b> This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                    |

## Response Parameters

Status code: 200

Table 5-265 Response body parameters

| Parameter  | Type   | Description                                                                                                                                                                          |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

| Parameter   | Type                                   | Description                                                                                                |
|-------------|----------------------------------------|------------------------------------------------------------------------------------------------------------|
| certificate | <a href="#">CertificateInfo</a> object | <b>Definition:</b> Specifies the certificate information. The certificate is defined by the sub-parameter. |

Table 5-266 CertificateInfo

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                             |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the certificate. This parameter does not take effect whether it is set to <b>true</b> or <b>false</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The certificate is available.</li><li>• <b>false:</b> The certificate is unavailable.</li></ul> |
| certificate    | String  | <b>Definition:</b> Specifies the certificate content.<br>It supports certificate chains with a maximum of 11 layers (including certificates and certificate chains).<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 65,536 characters.                                                                    |
| description    | String  | <b>Definition:</b> Provides supplementary information about the certificate.<br><b>Range:</b> 0 to 255 characters.                                                                                                                                                                                                                      |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain      | String | <b>Definition:</b> Specifies the domain names used by the server certificate.<br><b>Range:</b> The value can contain 0 to 10,000 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 100 domain names are allowed. <ul style="list-style-type: none"><li>• A common domain name consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit. Example: www.test.com.</li><li>• A wildcard domain name is a domain name that starts with *. Example: *.test.com</li></ul> |
| id          | String | <b>Definition:</b> Specifies the certificate ID.<br><b>Range:</b> The value consists of 32 digits and lowercase letters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| name        | String | <b>Definition:</b> Specifies the certificate name.<br><b>Range:</b> 0 to 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| private_key | String | <b>Definition:</b> Specifies the private key of the server certificate.<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 8,192 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| type        | String | <b>Definition:</b> Specifies the certificate type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>server:</b> server certificates</li><li>• <b>client</b> CA certificates</li><li>• <b>server_sm:</b> server SM certificates</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                          |
| created_at  | String | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Parameter                 | Type             | Description                                                                                                                                                                                                                                                                          |
|---------------------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at                | String           | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                           |
| expire_time               | String           | <b>Definition:</b> Specifies the time when the certificate expires.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                     |
| project_id                | String           | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.                                   |
| enc_certificate           | String           | <b>Definition:</b> Specifies the content of the server SM certificate.<br>It supports certificate chains with a maximum of 11 layers (including certificates and certificate chains).<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 65536 characters. |
| enc_private_key           | String           | <b>Definition:</b> Specifies the private key of the server SM certificate.<br><b>Range:</b> The value must be PEM encoded, and can contain a maximum of 8,192 characters.                                                                                                            |
| scm_certificate_id        | String           | <b>Definition:</b> Specifies the ID of the certificate managed on Cloud Certificate & Manager (CCM).<br><b>Range:</b> N/A                                                                                                                                                            |
| common_name               | String           | <b>Definition:</b> Specifies the primary domain name of the certificate.<br><b>Range:</b> N/A                                                                                                                                                                                        |
| fingerprint               | String           | <b>Definition:</b> Specifies the fingerprint of the certificate.<br><b>Range:</b> N/A                                                                                                                                                                                                |
| subject_alternative_names | Array of strings | <b>Definition:</b> Specifies all the domain names of the certificate.<br><b>Range:</b> N/A                                                                                                                                                                                           |

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                       |
|-----------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| source                | String | <b>Definition:</b> Specifies the source of the certificate.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>scm:</b> certificates from CCM</li><li>• If this parameter is left blank, self-signed certificates will be used.</li></ul>                                |
| protection_status     | String | <b>Definition:</b> Specifies the protection status.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul>                       |
| protection_reason     | String | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Range:</b> N/A                                                                                                                                                                                         |
| enterprise_project_id | String | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |

## Example Requests

Modifying the name and description of a certificate

```
PUT https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/certificates/
233a325e5e3e4ce8beeb320aa714cc12
```

```
{
 "certificate" : {
 "name" : "My Certificate",
 "description" : "Update my Certificate."
 }
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "certificate" : {
 "private_key" : "-----BEGIN PRIVATE KEY-----
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBCgwgggSkAgEAAoIBAQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J
```



```
+B7kYwsMhRcgdcJ8KcN1nfzTvl2ksXITQ2o9BkpStnPetB4s32ZiJRMlk
+61iUUMNShwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rMMD30gH6QoP3cq7PGWcuZKV7hjd1tjCT
QukwMvqV8lcq39buNplgDOWzEP5AqzXtCOFYn6RTH5SRug4hKNN7sT1eYMSlHu7wtEBDKVgrLjOCe/
W2f8rLT1zEsoAW2ChLZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvlDeeQ460swjwbwS/RbJh3slwLCRLU08kEo04Z9H/
AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/
HlfvCarftGgMaYWPSPNCJRMXB7tPwpQu19esjz4Z/
cR2Je4FTLPrffGUsHFgZjv5OQBZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8ISETq8YaXngBO6vES9LMhHkNK
Krciu9YkInNEHu6uRJ5g/eGGX3KQynTvvIhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9MEGpFYI6AdHlwFZcT/
RNAxhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7AlekrGuPtfV1vWklg
+buFhgGaiAEYTPaUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CTXUqgCZo8MKeV2jf2drlxRRwRL33SksQbzAQ/
qrLdT7GP3sCGqvkyWY2FPdFYf8kxGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/
fbwjPjP7dtU7n8EzkRUNE6aIMHOFeych/
PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLriWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7y
QiYWU
+wthAr9urbWYdGZIS6VjoTkF6r7VZoILXX0fBuXh6lm8K8lQRfBpJff56p9pMwaBpDNDrfpHB5utBUs40Yldp6w
KBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKscpAg38zJf3bGSXU/jR4eB1lVQhELGI9CbKsdzKM71GyElmix/
T7FnJSHIWlho1qVo6AQyduNWnAQD15pr8KAdXGAZZ1FQcb3KYa
+2fflERmazdOTwJYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak/735uP20KKqhNehZpC2dJei7OilgRhCS/
dKASUXHSW4fptBnUxACYocdDxtY4Vhaf17FPMdvGL8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa
+2cFm1Agf7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLA0GBAJkD4wHW54PwD4Ctfk9ojHjWB7pQUiYpT
ZO9dm
+4fpCMn9Okf43AE2yAOaAP94GdzdDJkxfciXKcsYr9lIukfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO3
8a5gZaOm/BUIGKMWXzuEd3fy+1rCUwzOp9LSjtYf4ege-----END PRIVATE KEY-----",
 "description" : "Update my Certificate.",
 "domain" : null,
 "created_at" : "2019-03-31T22:23:51Z",
 "expire_time" : "2045-11-17T13:25:47Z",
 "id" : "233a325e5e3e4ce8beeb320aa714cc12",
 "name" : "My Certificate",
 "certificate" : "-----BEGIN CERTIFICATE-----
MIIC4TCCAcmgAwIBAgICERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMMTXlDb21wYW55IENBMB4X
DTE4MDcwMjEzMTU0N1oXDTQ1MTE5NzEzMTU0N1owFDESMBAGA1UEAwwJbG9jYWxob3N0MIIIBjANBgkqh
kiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAFQgZi3ucTX+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5U0NqPQZKUrZz3rQeLn9mYiUTJZPutYIFDDbB8CtlgV
+eyU9yYJslWx/Bm5kWNPh97B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6fCHkt/
W7JaSiAzlsx+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/
Ky09cxLKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPLZUUn7yw3nkOOTLMI28IEv0WYyYd7CMJQks1NPJBKNOGfR/
wiDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29thwQKuUvJhwR/
AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGCSqGSIb3DQEBCwUAA4IBAQA8IMQJxaTey7EjXtRSLVl
EAMftAQPG6jijNQuvIBQYUDauDT4W2XUZ5wAnjiOyQ83va672K1G9s8n6xIH
+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDaetzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPR
LYlp1HMnl6hkjPk4PCZwKnha0dlScati9CCt3UzXSNJOSLaIKdHERH08lqd+1BchScxCfk0xNITn1HZZGml
+vbmunok3A2luc14rnsrbkGYqxGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZiYsGDVN+9QBd0eYUHce
+77s96i3l-----END CERTIFICATE-----",
 "admin_state_up" : true,
 "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
 "updated_at" : "2019-03-31T23:26:49Z",
 "type" : "server",
 "common_name" : "www.example.com",
 "fingerprint" : "869df7fcb441c2ef3fb9329437815972eeb1ef0e",
 "subject_alternative_names" : ["www.example.com"],
 "scm_certificate_id" : "",
 "source" : "",
 "protection_status" : "nonProtection",
 "protection_reason" : "",
 "enc_certificate" : "",
 "enc_private_key" : ""
},
 "request_id" : "d9abea6b-98ee-4ad4-8c5d-185ded48742f"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Modifying the name and description of a certificate

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class UpdateCertificateSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 UpdateCertificateRequest request = new UpdateCertificateRequest();
 request.withCertificateId("{certificate_id}");
 UpdateCertificateRequestBody body = new UpdateCertificateRequestBody();
 UpdateCertificateOption certificatebody = new UpdateCertificateOption();
 certificatebody.withDescription("Update my Certificate.")
 .withName("My Certificate");
 body.withCertificate(certificatebody);
 request.withBody(body);
 try {
 UpdateCertificateResponse response = client.updateCertificate(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

### Modifying the name and description of a certificate

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *
```

```
if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = UpdateCertificateRequest()
 request.certificate_id = "{certificate_id}"
 certificatebody = UpdateCertificateOption(
 description="Update my Certificate.",
 name="My Certificate"
)
 request.body = UpdateCertificateRequestBody(
 certificate=certificatebody
)
 response = client.update_certificate(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Modifying the name and description of a certificate

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
```

```
WithCredential(auth).
Build()

request := &model.UpdateCertificateRequest{}
request.CertificateId = "{certificate_id}"
descriptionCertificate:= "Update my Certificate."
nameCertificate:= "My Certificate"
certificatebody := &model.UpdateCertificateOption{
 Description: &descriptionCertificate,
 Name: &nameCertificate,
}
request.Body = &model.UpdateCertificateRequestBody{
 Certificate: certificatebody,
}
response, err := client.UpdateCertificate(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.7.5 Deleting a Certificate

### Function

This API is used to delete a certificate. If you delete a certificate from CCM, the certificate will only be deleted from the ELB console, but not from the CCM console. To delete a certificate associated with a listener, you need to unbind the certificate from the listener first.

### Constraints

If the certificate is used by a listener, the certificate cannot be deleted, and the 409 Conflict error code will be displayed.

### Calling Method

For details, see [Calling APIs](#).

## URI

DELETE /v3/{project\_id}/elb/certificates/{certificate\_id}

**Table 5-267** Path Parameters

| Parameter      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id     | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| certificate_id | Yes       | String | Specifies a certificate ID.                                                                                                                                                                                                                                                                                |

## Request Parameters

**Table 5-268** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 204**

Successful request.

None

## Example Requests

Deleting an SSL certificate

```
DELETE https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/certificates/
233a325e5e3e4ce8beeb320aa714cc12
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeleteCertificateSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 DeleteCertificateRequest request = new DeleteCertificateRequest();
 request.withCertificateId("{certificate_id}");
 try {
 DeleteCertificateResponse response = client.deleteCertificate(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

### Python

```
coding: utf-8

import os
```

```
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeleteCertificateRequest()
 request.certificate_id = "{certificate_id}"
 response = client.delete_certificate(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.DeleteCertificateRequest{
 request.CertificateId = "{certificate_id}"
 }
```

```
response, err := client.DeleteCertificate(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.7.6 Batch Deleting Certificates

### Function

This API is used to batch delete certificates.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/certificates/batch-delete



**Table 5-269** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-270** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-271** Request body parameters

| Parameter    | Mandatory | Type             | Description                                          |
|--------------|-----------|------------------|------------------------------------------------------|
| certificates | Yes       | Array of strings | Specifies the IDs of the certificates to be deleted. |

## Response Parameters

**Status code: 200**

**Table 5-272** Response body parameters

| Parameter    | Type                                                         | Description                                                  |
|--------------|--------------------------------------------------------------|--------------------------------------------------------------|
| certificates | Array of <a href="#">BatchDeleteCertificatesResp</a> objects | Specifies the response body for batch deleting certificates. |

**Table 5-273** BatchDeleteCertificatesResp

| Parameter  | Type   | Description                                                                                                                                                                      |
|------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id         | String | Specifies the IDs of the certificates.                                                                                                                                           |
| ret_status | String | Specifies the deletion result of a certificate. <b>not found</b> indicates that the certificate does not exist, and <b>successful</b> indicates that the certificate is deleted. |
| ret_code   | String | Specifies the error code when the deletion fails.                                                                                                                                |

## Example Requests

Batch deleting certificates

```
POST https://{ELB_Endpoint}/v3/{project_id}/elb/certificates/batch-delete
```

```
{
 "certificates" : ["de3404aeb44f499893fb42a0b218a515", "de3404aeb44f499893fb42a0b218a123"]
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "certificates" : [{
 "id" : "de3404aeb44f499893fb42a0b218a515",
 "ret_status" : "successful"
 }, {
 "id" : "de3404aeb44f499893fb42a0b218a515",
 "ret_status" : "successful"
 }],
 "request_id" : "98414965-856c-4be3-8a33-3e08432a222e"
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.7.7 Enabling or Disabling the Private Key Feature

### Function

This API is used to enable or disable **private\_key\_echo**. **private\_key\_echo** defines whether to include **private\_key** and **enc\_private\_key** in the response to each certificate API. If **private\_key\_echo** is set to **true**, the private key is returned when APIs are called to create a certificate, update a certificate, query the certificate details, and query the certificate list. If **private\_key\_echo** is set to **false**, the private key is anonymized as **\*\*\*\*\*** and returned. The **private\_key\_echo** setting applies to the whole tenant project. It is enabled by default.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/certificates/settings/private-key-echo

**Table 5-274** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

### Request Parameters

**Table 5-275** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-276** Request body parameters

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| private_key_echo | Yes       | Boolean | <b>Definition:</b> Specifies whether to set <b>private_key_echo</b> to <b>true</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The private key is displayed in the responses of the APIs for querying, adding, and updating a certificate, as well as the API for querying the certificate list.</li><li>• <b>false:</b> The private key is not displayed in the responses of all certificate APIs, but anonymized as ****.</li></ul> <b>Default value:</b> N/A |

## Response Parameters

**Status code:** 201

**Table 5-277** Response body parameters

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id       | String  | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-).                                                                                                                                                                                                                                                                              |
| private_key_echo | Boolean | <b>Definition:</b> Specifies whether to set <b>private_key_echo</b> to <b>true</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The private key is displayed in the responses of the APIs for querying, adding, and updating a certificate, as well as the API for querying the certificate list.</li><li>• <b>false:</b> The private key is not displayed in the responses of all certificate APIs, but anonymized as ****.</li></ul> |

## Example Requests

Enabling or disabling the private key feature

```
POST https://{ELB_Endpoint}/v3/{project_id}/elb/certificates/settings/private-key-echo
{
 "private_key_echo" : true
}
```

## Example Responses

**Status code: 201**

Successful request.

```
{
 "private_key_echo" : true,
 "request_id" : "98414965-856c-4be3-8a33-3e08432a222e"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Enabling or disabling the private key feature

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CreateCertificatePrivateKeyEchoSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 CreateCertificatePrivateKeyEchoRequest request = new CreateCertificatePrivateKeyEchoRequest();
 CreateCertificatePrivateKeyEchoRequestBody body = new
 CreateCertificatePrivateKeyEchoRequestBody();
 body.withPrivateKeyEcho(true);
```

```
request.withBody(body);
try {
 CreateCertificatePrivateKeyEchoResponse response = client.createCertificatePrivateKeyEcho(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

### Enabling or disabling the private key feature

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateCertificatePrivateKeyEchoRequest()
 request.body = CreateCertificatePrivateKeyEchoRequestBody(
 private_key_echo=True
)
 response = client.create_certificate_private_key_echo(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Enabling or disabling the private key feature

```
package main

import (
 "fmt"
```

```
"github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
"github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.CreateCertificatePrivateKeyEchoRequest{}
 request.Body = &model.CreateCertificatePrivateKeyEchoRequestBody{
 PrivateKeyEcho: true,
 }
 response, err := client.CreateCertificatePrivateKeyEcho(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 201         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.7.8 Querying Whether the Private Key Feature Is Enabled

### Function

This API is used to query whether **private\_key\_echo** is set to **true** or **false**. This parameter defines whether to include **private\_key** and **enc\_private\_key** in the

response to each certificate API. If **private\_key\_echo** is set to **true**, the private key is returned. If set to **false**, the private key is anonymized as **\*\*\*\*\*** and returned. The **private\_key\_echo** setting applies to the whole tenant project. It is enabled by default.

## Calling Method

For details, see [Calling APIs](#).

## URI

GET /v3/{project\_id}/elb/certificates/settings/private-key-echo

**Table 5-278** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-279** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200



**Table 5-280** Response body parameters

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id       | String  | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-).                                                                                                                                                                                                                                                |
| private_key_echo | Boolean | Specifies whether <b>private_key_echo</b> is enabled.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The private key is displayed in the responses of the APIs for querying, adding, and updating a certificate, as well as the API for querying the certificate list.</li><li>• <b>false:</b> The private key is not displayed in the responses of all certificate APIs, but anonymized as *****.</li></ul> |

## Example Requests

Querying whether the private key feature is enabled

```
GET https://{ELB_Endpoint}/v3/{project_id}/elb/certificates/settings/private-key-echo
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "private_key_echo" : true,
 "request_id" : "98414965-856c-4be3-8a33-3e08432a222e"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;
```

```
public class ShowCertificatePrivateKeyEchoSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowCertificatePrivateKeyEchoRequest request = new ShowCertificatePrivateKeyEchoRequest();
 try {
 ShowCertificatePrivateKeyEchoResponse response = client.showCertificatePrivateKeyEcho(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
```

```
request = ShowCertificatePrivateKeyEchoRequest()
response = client.show_certificate_private_key_echo(request)
print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ShowCertificatePrivateKeyEchoRequest{}
 response, err := client.ShowCertificatePrivateKeyEcho(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

# 5.8 Security Policy

## 5.8.1 Creating a Custom Security Policy

### Function

This API is used to create a custom security policy. If you need a custom security policy, you need to specify **security\_policy\_id** when you add an HTTPS or TLS listener to your load balancer.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/security-policies

**Table 5-281** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-282** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-283** Request body parameters

| Parameter       | Mandatory | Type                              | Description                                                                                                   |
|-----------------|-----------|-----------------------------------|---------------------------------------------------------------------------------------------------------------|
| security_policy | Yes       | CreateSecurityPolicyOption object | <b>Definition:</b> Specifies the parameters for creating a custom security policy.<br><b>Constraints:</b> N/A |

**Table 5-284** CreateSecurityPolicyOption

| Parameter   | Mandatory | Type   | Description                                                                                                                                                               |
|-------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name        | No        | String | <b>Definition:</b> Specifies the name of the custom security policy.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 255 characters.<br><b>Default value:</b> N/A        |
| description | No        | String | <b>Definition:</b> Specifies the description of the custom security policy.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 255 characters.<br><b>Default value:</b> N/A |

| Parameter             | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | String           | <b>Definition:</b> Specifies the ID of the enterprise project. If no enterprise project ID is specified during resource creation, 0 is returned, indicating that the resource belongs to the default enterprise project.<br><b>Constraints:</b> The enterprise project ID cannot be "", 0, or an enterprise project ID that does not exist.<br><b>Range:</b> N/A<br><b>Default value:</b> 0 |
| protocols             | Yes       | Array of strings | <b>Definition:</b> Lists the TLS protocols supported by the custom security policy.<br><b>Constraints:</b> N/A<br><b>Range:</b> TLSv1, TLSv1.1, TLSv1.2, or TLSv1.3.<br><b>Default value:</b> N/A                                                                                                                                                                                           |

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ciphers   | Yes       | Array of strings | <p><b>Definition:</b> Lists the cipher suites supported by the custom security policy.</p> <p><b>Constraints:</b> The protocol and cipher suite must match. At least one cipher suite must match the protocol.</p> <p><b>Range:</b> ECDHE-RSA-AES256-GCM-SHA384, ECDHE-RSA-AES128-GCM-SHA256, ECDHE-ECDSA-AES256-GCM-SHA384, ECDHE-ECDSA-AES128-GCM-SHA256, AES128-GCM-SHA256, AES256-GCM-SHA384, ECDHE-ECDSA-AES128-SHA256, ECDHE-RSA-AES128-SHA256, AES128-SHA256, AES256-SHA256, ECDHE-ECDSA-AES256-SHA384, ECDHE-RSA-AES256-SHA384, ECDHE-ECDSA-AES128-SHA, ECDHE-RSA-AES128-SHA, ECDHE-RSA-AES256-SHA, ECDHE-ECDSA-AES256-SHA, AES128-SHA, AES256-SHA, CAMELLIA128-SHA, DES-CBC3-SHA, CAMELLIA256-SHA, ECDHE-RSA-CHACHA20-POLY1305, ECDHE-ECDSA-CHACHA20-POLY1305, TLS_AES_128_GCM_SHA256, TLS_AES_256_GCM_SHA384, TLS_CHACHA20_POLY1305_SHA256, TLS_AES_128_CCM_SHA256, TLS_AES_128_CCM_8_SHA256</p> <p><b>Default value:</b> N/A</p> <p><b>NOTE</b><br/>You can match the protocol and cipher suite based on system security policy.</p> |

## Response Parameters

Status code: 201

**Table 5-285** Response body parameters

| Parameter       | Type                                  | Description                                                                                                                                                                          |
|-----------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| security_policy | <a href="#">SecurityPolicy</a> object | <b>Definition:</b> Specifies the custom security policy information.                                                                                                                 |
| request_id      | String                                | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-286** SecurityPolicy

| Parameter   | Type                                         | Description                                                                                                  |
|-------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| id          | String                                       | <b>Definition:</b> Specifies the ID of the custom security policy.<br><b>Range:</b> N/A                      |
| project_id  | String                                       | <b>Definition:</b> Specifies the project ID of the custom security policy.<br><b>Range:</b> N/A              |
| name        | String                                       | <b>Definition:</b> Specifies the name of the custom security policy.<br><b>Range:</b> N/A                    |
| description | String                                       | <b>Definition:</b> Provides supplementary information about the custom security policy.<br><b>Range:</b> N/A |
| listeners   | Array of <a href="#">ListenerRef</a> objects | <b>Definition:</b> Specifies the listeners that use the custom security policies.                            |
| protocols   | Array of strings                             | <b>Definition:</b> Lists the TLS protocols supported by the custom security policy.<br><b>Range:</b> N/A     |
| ciphers     | Array of strings                             | <b>Definition:</b> Lists the cipher suites supported by the custom security policy.<br><b>Range:</b> N/A     |



| Parameter             | Type   | Description                                                                                                                                                                                                                                                                       |
|-----------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | String | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |
| created_at            | String | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                      |
| updated_at            | String | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                        |

**Table 5-287** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

## Example Requests

Creating a custom security policy and specifying the TLS protocol and cipher suite

```
POST https://{ELB_Endpoint}/v3/7a9941d34fc1497d8d0797429ecfd354/elb/security-policies
```

```
{
 "security_policy": {
 "name": "test_1",
 "description": "test1",
 "protocols": ["TLSv1.2", "TLSv1", "TLSv1.3"],
 "ciphers": ["ECDHE-ECDSA-AES128-SHA", "TLS_AES_128_GCM_SHA256",
 "TLS_AES_128_CCM_8_SHA256"]
 }
}
```

## Example Responses

**Status code: 201**

Successful request.

```
{
 "request_id": "6b50d914-41f2-4e50-8929-e8a9837dbe75",
 "security_policy": {
 "id": "d74e27c9-4d60-427c-a11f-21142117c433",
```

```
"name" : "test_1",
"project_id" : "7a9941d34fc1497d8d0797429ecfd354",
"description" : "test1",
"protocols" : ["TLSv1.2", "TLSv1", "TLSv1.3"],
"ciphers" : ["ECDHE-ECDSA-AES128-SHA", "TLS_AES_128_GCM_SHA256",
"TLS_AES_128_CCM_8_SHA256"],
"listeners" : [],
"created_at" : "2021-03-26T01:33:12Z",
"updated_at" : "2021-03-26T01:33:12Z",
"enterprise_project_id" : "0"
}
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Creating a custom security policy and specifying the TLS protocol and cipher suite

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class CreateSecurityPolicySolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();

 CreateSecurityPolicyRequest request = new CreateSecurityPolicyRequest();
 CreateSecurityPolicyRequestBody body = new CreateSecurityPolicyRequestBody();
 List<CreateSecurityPolicyOption.CiphersEnum> listSecurityPolicyCiphers = new ArrayList<>();
 listSecurityPolicyCiphers.add(CreateSecurityPolicyOption.CiphersEnum.fromValue("ECDHE-ECDSA-
AES128-SHA"));

 listSecurityPolicyCiphers.add(CreateSecurityPolicyOption.CiphersEnum.fromValue("TLS_AES_128_GCM_SHA2
56"));

 listSecurityPolicyCiphers.add(CreateSecurityPolicyOption.CiphersEnum.fromValue("TLS_AES_128_CCM_8_SHA
256"));
 }
}
```

```
List<String> listSecurityPolicyProtocols = new ArrayList<>();
listSecurityPolicyProtocols.add("TLSv1.2");
listSecurityPolicyProtocols.add("TLSv1");
listSecurityPolicyProtocols.add("TLSv1.3");
CreateSecurityPolicyOption securityPolicybody = new CreateSecurityPolicyOption();
securityPolicybody.withName("test_1")
 .withDescription("test1")
 .withProtocols(listSecurityPolicyProtocols)
 .withCiphers(listSecurityPolicyCiphers);
body.withSecurityPolicy(securityPolicybody);
request.withBody(body);
try {
 CreateSecurityPolicyResponse response = client.createSecurityPolicy(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

### Creating a custom security policy and specifying the TLS protocol and cipher suite

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateSecurityPolicyRequest()
 listCiphersSecurityPolicy = [
 "ECDHE-ECDSA-AES128-SHA",
 "TLS_AES_128_GCM_SHA256",
 "TLS_AES_128_CCM_8_SHA256"
]
 listProtocolsSecurityPolicy = [
 "TLSv1.2",
 "TLSv1",
 "TLSv1.3"
]
```

```
securityPolicybody = CreateSecurityPolicyOption(
 name="test_1",
 description="test1",
 protocols=listProtocolsSecurityPolicy,
 ciphers=listCiphersSecurityPolicy
)
request.body = CreateSecurityPolicyRequestBody(
 security_policy=securityPolicybody
)
response = client.create_security_policy(request)
print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Creating a custom security policy and specifying the TLS protocol and cipher suite

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.CreateSecurityPolicyRequest{
 var listCiphersSecurityPolicy = []model.CreateSecurityPolicyOptionCiphers{
 model.GetCreateSecurityPolicyOptionCiphersEnum().ECDHE_ECDSA_AES128_SHA,
 model.GetCreateSecurityPolicyOptionCiphersEnum().TLS_AES_128_GCM_SHA256,
 model.GetCreateSecurityPolicyOptionCiphersEnum().TLS_AES_128_CCM_8_SHA256,
 }
 var listProtocolsSecurityPolicy = []string{
 "TLSv1.2",
 "TLSv1",
 "TLSv1.3",
 }
 nameSecurityPolicy:= "test_1"
 descriptionSecurityPolicy:= "test1"
 securityPolicybody := &model.CreateSecurityPolicyOption{
 Name: &nameSecurityPolicy,
 Description: &descriptionSecurityPolicy,
```

```
 Protocols: listProtocolsSecurityPolicy,
 Ciphers: listCiphersSecurityPolicy,
 }
 request.Body = &model.CreateSecurityPolicyRequestBody{
 SecurityPolicy: securityPolicybody,
 }
 response, err := client.CreateSecurityPolicy(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 201         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.8.2 Querying Custom Security Policies

### Function

This API is used to query custom security policies.

### Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query.
- Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/security-policies

**Table 5-288** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

**Table 5-289** Query Parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker    | No        | String  | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| limit     | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000                                                                                                                                                                                                                                                                  |

| Parameter    | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse | No        | Boolean          | <b>Definition:</b> Specifies whether to use reverse query.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true</b>: Query resources on the previous page.</li><li>• <b>false</b>: Query resources on the next page.</li></ul> <b>Default value:</b> false |
| id           | No        | Array of strings | <b>Definition:</b> Specifies the ID of the custom security policy.<br>Multiple IDs can be used for query in the format of <i>id=xxx&amp;id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                            |
| name         | No        | Array of strings | <b>Definition:</b> Specifies the name of the custom security policy.<br>Multiple names can be used for query in the format of <i>name=xxx&amp;name=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                    |

| Parameter   | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                  |
|-------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description | No        | Array of strings | <b>Definition:</b> Specifies the description of the custom security policy.<br>Multiple descriptions can be used for query in the format of <i>description=xxx&amp;description=xx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                         |
| protocols   | No        | Array of strings | <b>Definition:</b> Specifies the TLS protocols of the custom security policy. Multiple protocols are separated by spaces.<br>Multiple protocols can be used for query in the format of <i>protocols=xxx&amp;protocols=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| ciphers     | No        | Array of strings | Specifies the cipher suites supported by the custom security policy. Multiple cipher suites are separated using colons.<br>Multiple cipher suites can be used for query in the format of <i>ciphers=xxx&amp;ciphers=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A   |



## Request Parameters

**Table 5-290** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 200****Table 5-291** Response body parameters

| Parameter         | Type                                            | Description                                                                                                                                                                          |
|-------------------|-------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| security_policies | Array of <a href="#">SecurityPolicy</a> objects | <b>Definition:</b> Lists the security policies.                                                                                                                                      |
| request_id        | String                                          | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| page_info         | <a href="#">PageInfo</a> object                 | <b>Definition:</b> Specifies the pagination information.                                                                                                                             |

**Table 5-292** SecurityPolicy

| Parameter  | Type   | Description                                                                                     |
|------------|--------|-------------------------------------------------------------------------------------------------|
| id         | String | <b>Definition:</b> Specifies the ID of the custom security policy.<br><b>Range:</b> N/A         |
| project_id | String | <b>Definition:</b> Specifies the project ID of the custom security policy.<br><b>Range:</b> N/A |
| name       | String | <b>Definition:</b> Specifies the name of the custom security policy.<br><b>Range:</b> N/A       |

| Parameter             | Type                                         | Description                                                                                                                                                                                                                                                                       |
|-----------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description           | String                                       | <b>Definition:</b> Provides supplementary information about the custom security policy.<br><b>Range:</b> N/A                                                                                                                                                                      |
| listeners             | Array of <a href="#">ListenerRef</a> objects | <b>Definition:</b> Specifies the listeners that use the custom security policies.                                                                                                                                                                                                 |
| protocols             | Array of strings                             | <b>Definition:</b> Lists the TLS protocols supported by the custom security policy.<br><b>Range:</b> N/A                                                                                                                                                                          |
| ciphers               | Array of strings                             | <b>Definition:</b> Lists the cipher suites supported by the custom security policy.<br><b>Range:</b> N/A                                                                                                                                                                          |
| enterprise_project_id | String                                       | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |
| created_at            | String                                       | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                      |
| updated_at            | String                                       | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                        |

**Table 5-293** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

**Table 5-294** PageInfo

| Parameter       | Type    | Description                                                                                                                                                                                                                          |
|-----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String  | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |
| next_marker     | String  | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A                                                                  |
| current_count   | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A                                                                                                                                |

## Example Requests

Querying custom security policies on each page

```
GET https://{ELB_Endpoint}/v3/7a9941d34fc1497d8d0797429ecfd354/elb/security-policies?limit=2
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "request_id": "88424a61-6fa1-4850-aa8b-ce31d78abcf2",
 "security_policies": [{
 "id": "03cf511a-d130-445e-9b02-12d7049ddabf",
 "name": "test_security_policy",
 "project_id": "7a9941d34fc1497d8d0797429ecfd354",
 "description": "",
 "protocols": ["TLSv1", "TLSv1.3"],
 "ciphers": ["AES128-SHA", "TLS_AES_128_GCM_SHA256", "TLS_AES_256_GCM_SHA384",
 "TLS_CHACHA20_POLY1305_SHA256", "TLS_AES_128_CCM_SHA256", "TLS_AES_128_CCM_8_SHA256"],
 "listeners": [{
 "id": "6f7c0d75-81c4-4735-87a0-dc5df0f27f5a"
 }],
 "created_at": "2021-02-06T10:07:10Z",
 "updated_at": "2021-02-06T10:07:10Z",
 "enterprise_project_id": "0"
 }, {
 "id": "04e5d426-628c-42db-867c-fcaefbed2cab",
 "name": "update_securitypolicy",
 "project_id": "7a9941d34fc1497d8d0797429ecfd354",
 "description": "",
 "protocols": ["TLSv1.2", "TLSv1.1", "TLSv1.3"],
 "ciphers": ["CAMELLIA128-SHA", "TLS_AES_256_GCM_SHA384", "TLS_CHACHA20_POLY1305_SHA256",
 "TLS_AES_128_CCM_SHA256", "TLS_AES_128_CCM_8_SHA256"],
 "listeners": [{
 "id": "e19b7379-807e-47fb-b53d-46aff540580c"
 }]
 }]
}
```

```
 }],
 "created_at" : "2021-02-06T10:01:58Z",
 "updated_at" : "2021-03-20T07:18:59Z",
 "enterprise_project_id" : "0"
 }],
 "page_info" : {
 "next_marker" : "04e5d426-628c-42db-867c-fcaefbed2cab",
 "previous_marker" : "03cf511a-d130-445e-9b02-12d7049ddabf",
 "current_count" : 2
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListSecurityPoliciesSolution {
 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ListSecurityPoliciesRequest request = new ListSecurityPoliciesRequest();
 try {
 ListSecurityPoliciesResponse response = client.listSecurityPolicies(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ListSecurityPoliciesRequest()
 response = client.list_security_policies(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
```

```
Build()

request := &model.ListSecurityPoliciesRequest{}
response, err := client.ListSecurityPolicies(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.8.3 Querying the Details of a Custom Security Policy

### Function

This API is used to query the details of a custom security policy.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/security-policies/{security\_policy\_id}

**Table 5-295** Path Parameters

| Parameter          | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|--------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id         | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| security_policy_id | Yes       | String | Specifies the ID of the custom security policy.                                                                                                                                                                                                                                                            |

## Request Parameters

**Table 5-296** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 200**

**Table 5-297** Response body parameters

| Parameter       | Type                                  | Description                                                                                                                                                                          |
|-----------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| security_policy | <a href="#">SecurityPolicy</a> object | <b>Definition:</b> Specifies the custom security policy information.                                                                                                                 |
| request_id      | String                                | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-298** SecurityPolicy

| Parameter             | Type                                         | Description                                                                                                                                                                                                                                                                       |
|-----------------------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                    | String                                       | <b>Definition:</b> Specifies the ID of the custom security policy.<br><b>Range:</b> N/A                                                                                                                                                                                           |
| project_id            | String                                       | <b>Definition:</b> Specifies the project ID of the custom security policy.<br><b>Range:</b> N/A                                                                                                                                                                                   |
| name                  | String                                       | <b>Definition:</b> Specifies the name of the custom security policy.<br><b>Range:</b> N/A                                                                                                                                                                                         |
| description           | String                                       | <b>Definition:</b> Provides supplementary information about the custom security policy.<br><b>Range:</b> N/A                                                                                                                                                                      |
| listeners             | Array of <a href="#">ListenerRef</a> objects | <b>Definition:</b> Specifies the listeners that use the custom security policies.                                                                                                                                                                                                 |
| protocols             | Array of strings                             | <b>Definition:</b> Lists the TLS protocols supported by the custom security policy.<br><b>Range:</b> N/A                                                                                                                                                                          |
| ciphers               | Array of strings                             | <b>Definition:</b> Lists the cipher suites supported by the custom security policy.<br><b>Range:</b> N/A                                                                                                                                                                          |
| enterprise_project_id | String                                       | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |
| created_at            | String                                       | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                      |
| updated_at            | String                                       | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                        |



**Table 5-299** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

## Example Requests

Querying the details of a custom security policy

```
GET https://{ELB_Endpoint}/v3/7a9941d34fc1497d8d0797429ecfd354/elb/security-policies/
c73e0138-9bdc-40fb-951e-6a1598266ccd
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "security_policy" : {
 "id" : "c73e0138-9bdc-40fb-951e-6a1598266ccd",
 "name" : "update_securitypolicy",
 "project_id" : "7a9941d34fc1497d8d0797429ecfd354",
 "description" : "",
 "protocols" : ["TLSv1", "TLSv1.1", "TLSv1.2", "TLSv1.3"],
 "ciphers" : ["AES128-SHA", "AES256-GCM-SHA384", "ECDHE-ECDSA-AES128-GCM-SHA256", "ECDHE-
RSA-AES256-GCM-SHA384", "ECDHE-RSA-AES256-SHA", "TLS_AES_128_GCM_SHA256",
"TLS_AES_256_GCM_SHA384", "TLS_CHACHA20_POLY1305_SHA256", "TLS_AES_128_CCM_SHA256",
"TLS_AES_128_CCM_8_SHA256"],
 "listeners" : [{
 "id" : "8e92b7c3-cdae-4039-aa62-c76d09a5950a"
 }],
 "created_at" : "2021-03-20T09:48:14Z",
 "updated_at" : "2021-03-20T12:45:50Z",
 "enterprise_project_id" : "0"
 },
 "request_id" : "dab5d1de-c115-4623-b21d-363478fa0af4"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;
```

```
public class ShowSecurityPolicySolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR_REGION>"))
 .build();
 ShowSecurityPolicyRequest request = new ShowSecurityPolicyRequest();
 request.withSecurityPolicyId("{security_policy_id}");
 try {
 ShowSecurityPolicyResponse response = client.showSecurityPolicy(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR_REGION>")) \
 .build()

 try:
```

```
request = ShowSecurityPolicyRequest()
request.security_policy_id = "{security_policy_id}"
response = client.show_security_policy(request)
print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ShowSecurityPolicyRequest{
 request.SecurityPolicyId = "{security_policy_id}"
 }
 response, err := client.ShowSecurityPolicy(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.8.4 Updating a Custom Security Policy

### Function

This API is used to update a custom security policy.

### Constraints

If **protocols** or **ciphers** is updated, the modification takes effect immediately on all listeners that use the custom security policy. Updating other fields does not affect the listeners.

### Calling Method

For details, see [Calling APIs](#).

### URI

PUT /v3/{project\_id}/elb/security-policies/{security\_policy\_id}

**Table 5-300** Path Parameters

| Parameter          | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|--------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id         | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| security_policy_id | Yes       | String | Specifies the ID of the custom security policy.                                                                                                                                                                                                                                                            |

Request Parameters

Table 5-301 Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

Table 5-302 Request body parameters

| Parameter       | Mandatory | Type                              | Description                                                                                                             |
|-----------------|-----------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| security_policy | Yes       | UpdateSecurityPolicyOption object | <b>Definition:</b> Specifies the request parameters for updating the custom security policy.<br><b>Constraints:</b> N/A |

Table 5-303 UpdateSecurityPolicyOption

| Parameter   | Mandatory | Type             | Description                                                                                                                                                                                        |
|-------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name        | No        | String           | <b>Definition:</b> Specifies the name of the custom security policy.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 255 characters.<br><b>Default value:</b> N/A                                 |
| description | No        | String           | <b>Definition:</b> Specifies the description of the custom security policy.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 255 characters.<br><b>Default value:</b> N/A                          |
| protocols   | No        | Array of strings | <b>Definition:</b> Lists the TLS protocols supported by the custom security policy.<br><b>Constraints:</b> N/A<br><b>Range:</b> TLSv1, TLSv1.1, TLSv1.2, and TLSv1.3.<br><b>Default value:</b> N/A |

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|-----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ciphers   | No        | Array of strings | <p><b>Definition:</b> Lists the cipher suites supported by the custom security policy.</p> <p><b>Constraints:</b> The protocol and cipher suite must match. At least one cipher suite must match the protocol.</p> <p><b>Range:</b><br/>ECDHE-RSA-AES256-GCM-SHA384,ECDHE-RSA-AES128-GCM-SHA256,<br/>ECDHE-ECDSA-AES256-GCM-SHA384, ECDHE-ECDSA-AES128-GCM-SHA256,<br/>AES128-GCM-SHA256,<br/>AES256-GCM-SHA384,<br/>ECDHE-ECDSA-AES128-SHA256,<br/>ECDHE-RSA-AES128-SHA256,<br/>AES128-SHA256,AES256-SHA256,<br/>ECDHE-ECDSA-AES256-SHA384, ECDHE-RSA-AES256-SHA384,<br/>ECDHE-ECDSA-AES128-SHA,<br/>ECDHE-RSA-AES128-SHA,<br/>ECDHE-RSA-AES256-SHA,<br/>ECDHE-ECDSA-AES256-SHA,<br/>AES128-SHA, AES256-SHA,<br/>CAMELLIA128-SHA,<br/>DES-CBC3-SHA,<br/>CAMELLIA256-SHA, ECDHE-RSA-CHACHA20-POLY1305,<br/>ECDHE-ECDSA-CHACHA20-POLY1305,<br/>TLS_AES_128_GCM_SHA256,<br/>TLS_AES_256_GCM_SHA384,<br/>TLS_CHACHA20_POLY1305_SHA256,<br/>TLS_AES_128_CCM_SHA256,<br/>TLS_AES_128_CCM_8_SHA256</p> <p><b>Default value:</b> N/A</p> <p><b>NOTE</b><br/>You can match the protocol and cipher suite based on system security policy.</p> |

## Response Parameters

Status code: 200

**Table 5-304** Response body parameters

| Parameter       | Type                                  | Description                                                                                                                                                                          |
|-----------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| security_policy | <a href="#">SecurityPolicy</a> object | <b>Definition:</b> Specifies the custom security policy.<br><b>Constraints:</b> N/A                                                                                                  |
| request_id      | String                                | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-305** SecurityPolicy

| Parameter   | Type                                         | Description                                                                                                  |
|-------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| id          | String                                       | <b>Definition:</b> Specifies the ID of the custom security policy.<br><b>Range:</b> N/A                      |
| project_id  | String                                       | <b>Definition:</b> Specifies the project ID of the custom security policy.<br><b>Range:</b> N/A              |
| name        | String                                       | <b>Definition:</b> Specifies the name of the custom security policy.<br><b>Range:</b> N/A                    |
| description | String                                       | <b>Definition:</b> Provides supplementary information about the custom security policy.<br><b>Range:</b> N/A |
| listeners   | Array of <a href="#">ListenerRef</a> objects | <b>Definition:</b> Specifies the listeners that use the custom security policies.                            |
| protocols   | Array of strings                             | <b>Definition:</b> Lists the TLS protocols supported by the custom security policy.<br><b>Range:</b> N/A     |

| Parameter             | Type             | Description                                                                                                                                                                                                                                                                       |
|-----------------------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ciphers               | Array of strings | <b>Definition:</b> Lists the cipher suites supported by the custom security policy.<br><b>Range:</b> N/A                                                                                                                                                                          |
| enterprise_project_id | String           | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |
| created_at            | String           | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                      |
| updated_at            | String           | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                                                        |

**Table 5-306** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

## Example Requests

Changing the TLS protocol and cipher suite used by a custom security policy

```
PUT https://{ELB_Endpoint}/v3/7a9941d34fc1497d8d0797429ecfd354/elb/security-policies/
c73e0138-9bdc-40fb-951e-6a1598266ccd

{
 "security_policy": {
 "name": "update_securitypolicy",
 "protocols": ["TLSv1.2", "TLSv1.1", "TLSv1.3"],
 "ciphers": ["CAMELLIA128-SHA", "TLS_CHACHA20_POLY1305_SHA256", "TLS_AES_128_CCM_SHA256",
 "TLS_AES_128_CCM_8_SHA256"]
 }
}
```

## Example Responses

**Status code: 200**



Successful request.

```
{
 "request_id": "7fa73388-06b7-476d-9b0b-64f83de86ed4",
 "security_policy": {
 "id": "c73e0138-9bdc-40fb-951e-6a1598266ccd",
 "name": "update_securitypolicy",
 "project_id": "7a9941d34fc1497d8d0797429ecfd354",
 "description": "",
 "protocols": ["TLSv1.2", "TLSv1.1", "TLSv1.3"],
 "ciphers": ["CAMELLIA128-SHA", "TLS_CHACHA20_POLY1305_SHA256", "TLS_AES_128_CCM_SHA256",
"TLS_AES_128_CCM_8_SHA256"],
 "listeners": [{
 "id": "8e92b7c3-cdae-4039-aa62-c76d09a5950a"
 }],
 "created_at": "2021-03-20T09:48:14Z",
 "updated_at": "2021-03-26T01:30:31Z",
 "enterprise_project_id": "0"
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Changing the TLS protocol and cipher suite used by a custom security policy

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class UpdateSecurityPolicySolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 UpdateSecurityPolicyRequest request = new UpdateSecurityPolicyRequest();
 request.withSecurityPolicyId("{security_policy_id}");
 UpdateSecurityPolicyRequestBody body = new UpdateSecurityPolicyRequestBody();
```

```
List<UpdateSecurityPolicyOption.CiphersEnum> listSecurityPolicyCiphers = new ArrayList<>();
listSecurityPolicyCiphers.add(UpdateSecurityPolicyOption.CiphersEnum.fromValue("CAMELLIA128-
SHA"));

listSecurityPolicyCiphers.add(UpdateSecurityPolicyOption.CiphersEnum.fromValue("TLS_CHACHA20_POLY13
05_SHA256"));

listSecurityPolicyCiphers.add(UpdateSecurityPolicyOption.CiphersEnum.fromValue("TLS_AES_128_CCM_SHA2
56"));

listSecurityPolicyCiphers.add(UpdateSecurityPolicyOption.CiphersEnum.fromValue("TLS_AES_128_CCM_8_SH
A256"));

List<String> listSecurityPolicyProtocols = new ArrayList<>();
listSecurityPolicyProtocols.add("TLSv1.2");
listSecurityPolicyProtocols.add("TLSv1.1");
listSecurityPolicyProtocols.add("TLSv1.3");
UpdateSecurityPolicyOption securityPolicybody = new UpdateSecurityPolicyOption();
securityPolicybody.withName("update_securitypolicy")
 .withProtocols(listSecurityPolicyProtocols)
 .withCiphers(listSecurityPolicyCiphers);
body.withSecurityPolicy(securityPolicybody);
request.withBody(body);
try {
 UpdateSecurityPolicyResponse response = client.updateSecurityPolicy(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

### Changing the TLS protocol and cipher suite used by a custom security policy

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
```

```
request = UpdateSecurityPolicyRequest()
request.security_policy_id = "{security_policy_id}"
listCiphersSecurityPolicy = [
 "CAMELLIA128-SHA",
 "TLS_CHACHA20_POLY1305_SHA256",
 "TLS_AES_128_CCM_SHA256",
 "TLS_AES_128_CCM_8_SHA256"
]
listProtocolsSecurityPolicy = [
 "TLSv1.2",
 "TLSv1.1",
 "TLSv1.3"
]
securityPolicybody = UpdateSecurityPolicyOption(
 name="update_securitypolicy",
 protocols=listProtocolsSecurityPolicy,
 ciphers=listCiphersSecurityPolicy
)
request.body = UpdateSecurityPolicyRequestBody(
 security_policy=securityPolicybody
)
response = client.update_security_policy(request)
print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Changing the TLS protocol and cipher suite used by a custom security policy

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.UpdateSecurityPolicyRequest{
 request.SecurityPolicyId = "{security_policy_id}"
 var listCiphersSecurityPolicy = []model.UpdateSecurityPolicyOptionCiphers{
 model.GetUpdateSecurityPolicyOptionCiphersEnum().CAMELLIA128_SHA,
```

```
model.GetUpdateSecurityPolicyOptionCiphersEnum().TLS_CHACHA20_POLY1305_SHA256,
model.GetUpdateSecurityPolicyOptionCiphersEnum().TLS_AES_128_CCM_SHA256,
model.GetUpdateSecurityPolicyOptionCiphersEnum().TLS_AES_128_CCM_8_SHA256,
}
var listProtocolsSecurityPolicy = []string{
 "TLSv1.2",
 "TLSv1.1",
 "TLSv1.3",
}
nameSecurityPolicy:= "update_securitypolicy"
securityPolicybody := &model.UpdateSecurityPolicyOption{
 Name: &nameSecurityPolicy,
 Protocols: &listProtocolsSecurityPolicy,
 Ciphers: &listCiphersSecurityPolicy,
}
request.Body = &model.UpdateSecurityPolicyRequestBody{
 SecurityPolicy: securityPolicybody,
}
response, err := client.UpdateSecurityPolicy(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.8.5 Deleting a Custom Security Policy

### Function

This API is used to delete a custom security policy.

### Constraints

A custom security policy that has been used by a listener cannot be deleted.

### Calling Method

For details, see [Calling APIs](#).

## URI

DELETE /v3/{project\_id}/elb/security-policies/{security\_policy\_id}

**Table 5-307** Path Parameters

| Parameter          | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|--------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id         | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| security_policy_id | Yes       | String | Specifies the ID of the custom security policy.                                                                                                                                                                                                                                                            |

## Request Parameters

**Table 5-308** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 204**

Successful request.

None

## Example Requests

Deleting a custom security policy

```
DELETE https://{ELB_Endpoint}/v3/45977fa2dbd7482098dd68d0d8970117/elb/security-policies/8722e0e0-9cc9-4490-9660-8c9a5732fbb0
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeleteSecurityPolicySolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 DeleteSecurityPolicyRequest request = new DeleteSecurityPolicyRequest();
 request.withSecurityPolicyId("{security_policy_id}");
 try {
 DeleteSecurityPolicyResponse response = client.deleteSecurityPolicy(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

### Python

```
coding: utf-8

import os
```

```
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeleteSecurityPolicyRequest()
 request.security_policy_id = "{security_policy_id}"
 response = client.delete_security_policy(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.DeleteSecurityPolicyRequest{}
 request.SecurityPolicyId = "{security_policy_id}"
```

```
response, err := client.DeleteSecurityPolicy(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.8.6 Querying System Security Policies

### Function

This API is used to query system security policies.

System security policies are available to all users and cannot be created or modified.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/system-security-policies



**Table 5-309** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-310** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-311** Response body parameters

| Parameter                | Type                                                  | Description                                                                                                                                                                          |
|--------------------------|-------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| system_security_policies | Array of <a href="#">SystemSecurityPolicy</a> objects | <b>Definition:</b> Lists system security policies.                                                                                                                                   |
| request_id               | String                                                | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-312** SystemSecurityPolicy

| Parameter  | Type   | Description                                                                                                                                                                                                                                        |
|------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name       | String | <b>Definition:</b> Specifies the name of the system security policy.<br><b>Range:</b> N/A                                                                                                                                                          |
| protocols  | String | <b>Definition:</b> Lists the TLS protocols supported by the system security policy.<br><b>Range:</b> N/A                                                                                                                                           |
| ciphers    | String | <b>Definition:</b> Lists the cipher suites supported by the system security policy.<br><b>Range:</b> N/A                                                                                                                                           |
| project_id | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters. |

## Example Requests

Querying system security policies

```
GET https://{ELB_Endpoint}/v3/7a9941d34fc1497d8d0797429ecfd354/elb/system-security-policies
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "request_id" : "fa83d976-e617-4a96-9a43-5bdb33011f30",
 "system_security_policies" : [{
 "name" : "tls-1-0",
 "project_id" : "7a9941d34fc1497d8d0797429ecfd354",
 "protocols" : "TLSv1.2 TLSv1.1 TLSv1",
 "ciphers" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-ECDSA-AES256-
SHA:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-
GCM-SHA384:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-RSA-AES256-
SHA384:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:AES128-SHA:AES256-SHA"
 }, {
 "name" : "tls-1-0-inherit",
 "project_id" : "7a9941d34fc1497d8d0797429ecfd354",
 "protocols" : "TLSv1.2 TLSv1.1 TLSv1",
 "ciphers" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-ECDSA-AES256-
SHA:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-
GCM-SHA384:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-RSA-AES256-
SHA384:ECDHE-RSA-AES128-SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:AES128-SHA:AES256-
SHA:DHE-DSS-AES128-SHA:CAMELLIA128-SHA:EDH-RSA-DES-CBC3-SHA:DES-CBC3-SHA:ECDHE-RSA-RC4-
```

```
SHA:RC4-SHA:DHE-RSA-AES256-SHA:DHE-DSS-AES256-SHA:DHE-RSA-CAMELLIA256-SHA:DHE-DSS-
CAMELLIA256-SHA:CAMELLIA256-SHA:EDH-DSS-DES-CBC3-SHA:DHE-RSA-CAMELLIA128-SHA:DHE-DSS-
CAMELLIA128-SHA"
}, {
 "name" : "tls-1-1",
 "project_id" : "7a9941d34fc1497d8d0797429ecfd354",
 "protocols" : "TLSv1.2 TLSv1.1",
 "ciphers" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-ECDSA-AES256-
SHA:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-
GCM-SHA384:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-RSA-AES256-
SHA384:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:AES128-SHA:AES256-SHA"
}, {
 "name" : "tls-1-2",
 "project_id" : "7a9941d34fc1497d8d0797429ecfd354",
 "protocols" : "TLSv1.2",
 "ciphers" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-ECDSA-AES256-
SHA:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-
GCM-SHA384:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-RSA-AES256-
SHA384:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:AES128-SHA:AES256-SHA"
}, {
 "name" : "tls-1-2-strict",
 "project_id" : "7a9941d34fc1497d8d0797429ecfd354",
 "protocols" : "TLSv1.2",
 "ciphers" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-
GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-RSA-AES128-SHA256:AES128-
SHA256:AES256-SHA256:ECDHE-RSA-AES256-SHA384"
}, {
 "name" : "tls-1-2-fs",
 "project_id" : "7a9941d34fc1497d8d0797429ecfd354",
 "protocols" : "TLSv1.2",
 "ciphers" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-
GCM-SHA256:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-AES256-SHA384"
}, {
 "name" : "tls-1-0-with-1-3",
 "project_id" : "7a9941d34fc1497d8d0797429ecfd354",
 "protocols" : "TLSv1.3 TLSv1.2 TLSv1.1 TLSv1",
 "ciphers" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-ECDSA-AES256-
SHA:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-
GCM-SHA384:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-RSA-AES256-
SHA384:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:AES128-SHA:AES256-
SHA:TLS_AES_128_GCM_SHA256:TLS_AES_256_GCM_SHA384:TLS_CHACHA20_POLY1305_SHA256:TLS_AES_1
28_CCM_SHA256:TLS_AES_128_CCM_8_SHA256"
}, {
 "name" : "tls-1-2-fs-with-1-3",
 "project_id" : "7a9941d34fc1497d8d0797429ecfd354",
 "protocols" : "TLSv1.3 TLSv1.2",
 "ciphers" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-
GCM-SHA256:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-AES256-
SHA384:TLS_AES_128_GCM_SHA256:TLS_AES_256_GCM_SHA384:TLS_CHACHA20_POLY1305_SHA256:TLS_A
ES_128_CCM_SHA256:TLS_AES_128_CCM_8_SHA256"
}, {
 "name" : "hybrid-policy-1-0",
 "project_id" : "7a9941d34fc1497d8d0797429ecfd354",
 "protocols" : "TLSv1.2 TLSv1.1",
 "ciphers" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-ECDSA-AES256-
SHA:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-
GCM-SHA384:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-RSA-AES256-
SHA384:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:AES128-SHA:AES256-SHA"
}, {
 "name" : "tls-1-2-strict-no-cbc",
 "project_id" : "7a9941d34fc1497d8d0797429ecfd354",
 "protocols" : "TLSv1.2",
```

```
"ciphers" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-RSA-
AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256"
}]
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListSystemSecurityPoliciesSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ListSystemSecurityPoliciesRequest request = new ListSystemSecurityPoliciesRequest();
 try {
 ListSystemSecurityPoliciesResponse response = client.listSystemSecurityPolicies(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

### Python

```
coding: utf-8

import os
```

```
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ListSystemSecurityPoliciesRequest()
 response = client.list_system_security_policies(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ListSystemSecurityPoliciesRequest{}
 response, err := client.ListSystemSecurityPolicies(request)
 if err == nil {
```

```
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

# 5.9 IP Address Group

## 5.9.1 Creating an IP Address Group

### Function

This API is used to create an IP address group. You can associate the IP address group with a listener to control access to this listener.

Each IP address group can contain IP addresses, IP address ranges, and CIDR blocks. Each IP address range must be in the format of *ip-ip*, for example, 10.12.3.1-10.12.3.10. Both IPv4 and IPv6 addresses are supported.

Note: 0.0.0.0 will be considered the same as 0.0.0.0/32. If you enter both 0.0.0.0 and 0.0.0.0/32, either one will be kept. 0:0:0:0:0:0:1 will be considered the same as ::1 and ::1/128. If you enter 0:0:0:0:0:0:1, ::1, and ::1/128, only one will be kept.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/ipgroups

**Table 5-313** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-314** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-315** Request body parameters

| Parameter | Mandatory | Type                                       | Description                                                                                                      |
|-----------|-----------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| ipgroup   | Yes       | <a href="#">CreateIpGroupOption</a> object | <b>Definition:</b> Specifies the request parameters for creating an IP address group.<br><b>Constraints:</b> N/A |

**Table 5-316** CreateIpGroupOption

| Parameter   | Mandatory | Type                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                |
|-------------|-----------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id  | No        | String                                               | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A<br><b>NOTE</b><br>This parameter is invalid. The project ID in the URL is used. |
| description | No        | String                                               | <b>Definition:</b> Provides supplementary information about an IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 255 characters.<br><b>Default value:</b> N/A                                                                                                                                                                                                             |
| name        | No        | String                                               | <b>Definition:</b> Specifies the name of an IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 255 characters.<br><b>Default value:</b> N/A                                                                                                                                                                                                                                |
| ip_list     | Yes       | Array of <a href="#">CreateIpGroupOption</a> objects | <b>Definition:</b> Specifies entries in the IP address group. Both IPv4 and IPv6 entries are supported.<br><b>Constraints:</b> N/A                                                                                                                                                                                                                                                         |



| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | String | <b>Definition:</b> Specifies the ID of the enterprise project. If no enterprise project ID is specified during resource creation, 0 is returned, indicating that the resource belongs to the default enterprise project.<br><b>Constraints:</b> The enterprise project ID cannot be "", 0, or an enterprise project ID that does not exist.<br><b>Range:</b> N/A<br><b>Default value:</b> 0 |

**Table 5-317** CreateIpGroupIpOption

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip          | Yes       | String | <b>Definition:</b> Specifies the IP entries in the IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> Each entry can be an IP address, IP address range, or CIDR block. Each IP address range must be in the format of <i>ip-ip</i> , for example, 192.168.1.2-192.168.2.253 or 2001:0DB8:02de::0e12-2001:0DB8:02de::0e13. Both IPv4 and IPv6 addresses are supported.<br><b>Default value:</b> N/A |
| description | No        | String | <b>Definition:</b> Specifies remarks about the IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 255 characters.<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                 |

## Response Parameters

Status code: 201

**Table 5-318** Response body parameters

| Parameter  | Type                  | Description                                                                                                                                                                          |
|------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipgroup    | <b>IpGroup</b> object | <b>Definition:</b> Specifies the response body for creating an IP address group.                                                                                                     |
| request_id | String                | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-319** IpGroup

| Parameter             | Type                                | Description                                                                                                                                                                                                                                                                       |
|-----------------------|-------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                    | String                              | <b>Definition:</b> Specifies the ID of an IP address group.<br><b>Range:</b> N/A                                                                                                                                                                                                  |
| name                  | String                              | <b>Definition:</b> Specifies the name of an IP address group.<br><b>Range:</b> N/A                                                                                                                                                                                                |
| description           | String                              | <b>Definition:</b> Provides supplementary information about an IP address group.<br><b>Range:</b> N/A                                                                                                                                                                             |
| ip_list               | Array of <b>IpInfo</b> objects      | <b>Definition:</b> Specifies IP addresses in an IP address group. [] indicates any IP address.                                                                                                                                                                                    |
| listeners             | Array of <b>ListenerRef</b> objects | <b>Definition:</b> Specifies the IDs of listeners with which the IP address group is associated.                                                                                                                                                                                  |
| project_id            | String                              | <b>Definition:</b> Specifies the project ID of the IP address group.<br><b>Range:</b> N/A                                                                                                                                                                                         |
| enterprise_project_id | String                              | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |

| Parameter  | Type   | Description                                                                                                                                                               |
|------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| created_at | String | <b>Definition:</b> Specifies the time when the IP address group was created.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format. |
| updated_at | String | <b>Definition:</b> Specifies the time when the IP address group was updated.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format. |

**Table 5-320** IpInfo

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                            |
|-------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip          | String | <b>Definition:</b> Specifies the IP entries in the IP address group.<br><b>Range:</b> Each IP address range must be in the format of <i>ip-ip</i> , for example, 192.168.1.2-192.168.2.253 or 2001:0DB8:02de::0e12-2001:0DB8:02de::0e13. The end IP address must be greater than the start IP address. |
| description | String | <b>Definition:</b> Provides remarks about the IP address group.<br><b>Range:</b> 0 to 255 characters.                                                                                                                                                                                                  |

**Table 5-321** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

## Example Requests

Creating an IP address group and specifying IP addresses

```
POST https://{ELB_Endpoint}/v3/45977fa2dbd7482098dd68d0d8970117/elb/ipgroups
{
 "ipgroup": {
 "name": "test_ipg",
 "ip_list": [{
 "ip": "192.168.1.123"
 }
]
}
```

```
 }, {
 "ip" : "192.168.3.0/24",
 "description" : "test_ip"
 }, {
 "ip" : "2001:0DB8:02de:0000:0000:0000:0000:0e13"
 }
]
}
```

## Example Responses

### Status code: 201

Normal response to POST requests.

```
{
 "ipgroup" : {
 "description" : "",
 "id" : "8722e0e0-9cc9-4490-9660-8c9a5732fbb0",
 "name" : "test_ipg",
 "project_id" : "45977fa2dbd7482098dd68d0d8970117",
 "ip_list" : [{
 "ip" : "192.168.1.123",
 "description" : ""
 }, {
 "ip" : "192.168.3.0/24",
 "description" : "test_ip"
 }],
 "listeners" : [{
 "id" : "88f9c079-29cb-435a-b98f-0c5c0b90c2bd"
 }, {
 "id" : "2f4c9644-d5d2-4cf8-a3c0-944239a4f58c"
 }],
 "created_at" : "2018-01-16T03:19:16",
 "updated_at" : "2018-01-16T03:19:16"
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Creating an IP address group and specifying IP addresses

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class CreateIpGroupSolution {
 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 environment variables and decrypted during use to ensure security.
 }
}
```

```
// In this example, AK and SK are stored in environment variables for authentication. Before running
this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
CreateIpGroupRequest request = new CreateIpGroupRequest();
CreateIpGroupRequestBody body = new CreateIpGroupRequestBody();
List<CreateIpGroupOption> listIpGroupList = new ArrayList<>();
listIpGroupList.add(
 new CreateIpGroupOption()
 .withIp("192.168.1.123")
);
listIpGroupList.add(
 new CreateIpGroupOption()
 .withIp("192.168.3.0/24")
 .withDescription("test_ip")
);
listIpGroupList.add(
 new CreateIpGroupOption()
 .withIp("2001:0DB8:02de:0000:0000:0000:0000:0e13")
);
CreateIpGroupOption ipgroupbody = new CreateIpGroupOption();
ipgroupbody.setName("test_ipg")
 .withIpList(listIpGroupList);
body.withIpGroup(ipgroupbody);
request.withBody(body);
try {
 CreateIpGroupResponse response = client.createIpGroup(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

### Creating an IP address group and specifying IP addresses

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
```

```
In this example, AK and SK are stored in environment variables for authentication. Before running this
example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

try:
 request = CreateIpGroupRequest()
 listIpListIpGroup = [
 CreateIpGroupIpOption(
 ip="192.168.1.123"
),
 CreateIpGroupIpOption(
 ip="192.168.3.0/24",
 description="test_ip"
),
 CreateIpGroupIpOption(
 ip="2001:0DB8:02de:0000:0000:0000:0000:0e13"
)
]
 ipGroupBody = CreateIpGroupOption(
 name="test_ipg",
 ip_list=listIpListIpGroup
)
 request.body = CreateIpGroupRequestBody(
 ipGroup=ipGroupBody
)
 response = client.create_ip_group(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Creating an IP address group and specifying IP addresses

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
```

```
WithProjectId(projectId).
Build()

client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.CreateIpGroupRequest{}
descriptionIpList:= "test_ip"
var listIpListIpGroup = []model.CreateIpGroupIpOption{
 {
 Ip: "192.168.1.123",
 },
 {
 Ip: "192.168.3.0/24",
 Description: &descriptionIpList,
 },
 {
 Ip: "2001:0DB8:02de:0000:0000:0000:0000:0e13",
 },
}
nameIpGroup:= "test_ipg"
ipGroupbody := &model.CreateIpGroupOption{
 Name: &nameIpGroup,
 IpList: listIpListIpGroup,
}
request.Body = &model.CreateIpGroupRequestBody{
 IpGroup: ipGroupbody,
}
response, err := client.CreateIpGroup(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description                       |
|-------------|-----------------------------------|
| 201         | Normal response to POST requests. |

## Error Codes

See [Error Codes](#).

## 5.9.2 Querying IP Address Groups

### Function

This API is used to query IP address groups.

## Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query.
- Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

## Calling Method

For details, see [Calling APIs](#).

## URI

GET /v3/{project\_id}/elb/ipgroups

**Table 5-322** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |



**Table 5-323** Query Parameters

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker       | No        | String  | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                               |
| limit        | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000                                                                                                                                                                                                                                                                                                                                                                                                                                |
| page_reverse | No        | Boolean | <b>Definition:</b> Specifies whether to use reverse query.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Query resources on the previous page.</li><li>• <b>false:</b> Query resources on the next page.</li></ul> <b>Default value:</b> false |

| Parameter   | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id          | No        | Array of strings | <b>Definition:</b> Specifies the ID of an IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                         |
| name        | No        | Array of strings | <b>Definition:</b> Specifies the name of an IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                       |
| description | No        | Array of strings | <b>Definition:</b> Provides supplementary information about an IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                    |
| ip_list     | No        | Array of strings | <b>Definition:</b> Specifies one or more IP entries for querying IP address groups. If you enter multiple IP entries, the system searches for all IP address groups containing any of the IP entries.<br><br><b>Note:</b> All IP addresses, CIDR blocks, and IP address ranges are searched using exact matches. For example, if an IP address group has the IP address range 127.0.0.1-127.0.0.10, you need to set <b>ip_list</b> to <b>127.0.0.1-127.0.0.10</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter             | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | Array of strings | <p><b>Definition:</b> Specifies the ID of the enterprise project.</p> <p>Multiple values can be used for query in the format of:<br/><i>enterprise_project_id=xxx&amp;enterprise_project_id=xxx.</i></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enterprise_project_id</b> is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:ipgroups:list</b> permission must be assigned to the user group.</li><li>• If <b>enterprise_project_id</b> is specified, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:ipgroups:list</b> permission are queried.</li></ul> <p><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p> |

## Request Parameters

**Table 5-324** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                                   |
|--------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <p><b>Definition:</b> Specifies the token used for IAM authentication.</p> <p><b>Constraints:</b> N/A<br/><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p> |

## Response Parameters

Status code: 200

**Table 5-325** Response body parameters

| Parameter  | Type                            | Description                                                                                                                                                                          |
|------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipgroups   | Array of <b>IpGroup</b> objects | <b>Definition:</b> Lists the returned IP address groups.                                                                                                                             |
| request_id | String                          | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| page_info  | <b>PageInfo</b> object          | <b>Definition:</b> Specifies the pagination information.                                                                                                                             |

**Table 5-326** IpGroup

| Parameter   | Type                                | Description                                                                                           |
|-------------|-------------------------------------|-------------------------------------------------------------------------------------------------------|
| id          | String                              | <b>Definition:</b> Specifies the ID of an IP address group.<br><b>Range:</b> N/A                      |
| name        | String                              | <b>Definition:</b> Specifies the name of an IP address group.<br><b>Range:</b> N/A                    |
| description | String                              | <b>Definition:</b> Provides supplementary information about an IP address group.<br><b>Range:</b> N/A |
| ip_list     | Array of <b>IpInfo</b> objects      | <b>Definition:</b> Specifies IP addresses in an IP address group. [] indicates any IP address.        |
| listeners   | Array of <b>ListenerRef</b> objects | <b>Definition:</b> Specifies the IDs of listeners with which the IP address group is associated.      |
| project_id  | String                              | <b>Definition:</b> Specifies the project ID of the IP address group.<br><b>Range:</b> N/A             |

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                |
|-----------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | String | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 0: The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |
| created_at            | String | <b>Definition:</b> Specifies the time when the IP address group was created.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                  |
| updated_at            | String | <b>Definition:</b> Specifies the time when the IP address group was updated.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                  |

**Table 5-327** IpInfo

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                            |
|-------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip          | String | <b>Definition:</b> Specifies the IP entries in the IP address group.<br><b>Range:</b> Each IP address range must be in the format of <i>ip-ip</i> , for example, 192.168.1.2-192.168.2.253 or 2001:0DB8:02de::0e12-2001:0DB8:02de::0e13. The end IP address must be greater than the start IP address. |
| description | String | <b>Definition:</b> Provides remarks about the IP address group.<br><b>Range:</b> 0 to 255 characters.                                                                                                                                                                                                  |

**Table 5-328** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

**Table 5-329** PageInfo

| Parameter       | Type    | Description                                                                                                                                                                                                                          |
|-----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String  | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |
| next_marker     | String  | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A                                                                  |
| current_count   | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A                                                                                                                                |

## Example Requests

Querying IP address groups on each page

```
GET https://{ELB_Endpoint}/v3/45977fa2dbd7482098dd68d0d8970117/elb/ipgroups?limit=1
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "ipgroups": [{
 "description": "",
 "id": "8722e0e0-9cc9-4490-9660-8c9a5732fbb0",
 "name": "test_ipg",
 "project_id": "45977fa2dbd7482098dd68d0d8970117",
 "ip_list": [{
 "ip": "192.168.1.123",
 "description": ""
 }, {
 "ip": "192.168.3.0/24",
 "description": "test_ip"
 }],
 "listeners": [{
 "id": "88f9c079-29cb-435a-b98f-0c5c0b90c2bd"
 }, {
 "id": "2f4c9644-d5d2-4cf8-a3c0-944239a4f58c"
 }],
 "loadbalancers": [{
 "id": "98f9c079-29cb-435a-b98f-0c5c0b90c2bd"
 }, {
 "id": "3f4c9644-d5d2-4cf8-a3c0-944239a4f58c"
 }],
 "created_at": "2018-01-16T03:19:16",
 "updated_at": "2018-01-16T03:19:16"
 }],
}
```

```
"page_info" : {
 "previous_marker" : "1d321f77-bc7b-45d3-9cfe-d7c0b65a3620",
 "current_count" : 1
},
"request_id" : "8d9f423c-8766-4b6a-9952-275a88ac1ce3"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListIpGroupsSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ListIpGroupsRequest request = new ListIpGroupsRequest();
 try {
 ListIpGroupsResponse response = client.listIpGroups(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

### Python

```
coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ListIpGroupsRequest()
 response = client.list_ip_groups(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ListIpGroupsRequest{}
 response, err := client.ListIpGroups(request)
```



```
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.9.3 Querying the Details of an IP Address Group

### Function

This API is used to view the details of an IP address group.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/ipgroups/{ipgroup\_id}

**Table 5-330** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

| Parameter  | Mandatory | Type   | Description                                                 |
|------------|-----------|--------|-------------------------------------------------------------|
| ipgroup_id | Yes       | String | <b>Definition:</b> Specifies the ID of an IP address group. |

## Request Parameters

**Table 5-331** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-332** Response body parameters

| Parameter  | Type                  | Description                                                                                                                                                                          |
|------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipgroup    | <b>IpGroup</b> object | <b>Definition:</b> Specifies the response body for querying the details of the IP address group.                                                                                     |
| request_id | String                | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-333** IpGroup

| Parameter | Type   | Description                                                                        |
|-----------|--------|------------------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the ID of an IP address group.<br><b>Range:</b> N/A   |
| name      | String | <b>Definition:</b> Specifies the name of an IP address group.<br><b>Range:</b> N/A |

| Parameter             | Type                                         | Description                                                                                                                                                                                                                                                                |
|-----------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description           | String                                       | <b>Definition:</b> Provides supplementary information about an IP address group.<br><b>Range:</b> N/A                                                                                                                                                                      |
| ip_list               | Array of <a href="#">IpInfo</a> objects      | <b>Definition:</b> Specifies IP addresses in an IP address group. [] indicates any IP address.                                                                                                                                                                             |
| listeners             | Array of <a href="#">ListenerRef</a> objects | <b>Definition:</b> Specifies the IDs of listeners with which the IP address group is associated.                                                                                                                                                                           |
| project_id            | String                                       | <b>Definition:</b> Specifies the project ID of the IP address group.<br><b>Range:</b> N/A                                                                                                                                                                                  |
| enterprise_project_id | String                                       | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 0: The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |
| created_at            | String                                       | <b>Definition:</b> Specifies the time when the IP address group was created.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                  |
| updated_at            | String                                       | <b>Definition:</b> Specifies the time when the IP address group was updated.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                  |

**Table 5-334** IpInfo

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                            |
|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip        | String | <b>Definition:</b> Specifies the IP entries in the IP address group.<br><b>Range:</b> Each IP address range must be in the format of <i>ip-ip</i> , for example, 192.168.1.2-192.168.2.253 or 2001:0DB8:02de::0e12-2001:0DB8:02de::0e13. The end IP address must be greater than the start IP address. |

| Parameter   | Type   | Description                                                                                           |
|-------------|--------|-------------------------------------------------------------------------------------------------------|
| description | String | <b>Definition:</b> Provides remarks about the IP address group.<br><b>Range:</b> 0 to 255 characters. |

**Table 5-335** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

## Example Requests

Querying the details of an IP address group

```
GET https://{ELB_Endpoint}/v3/45977fa2dbd7482098dd68d0d8970117/elb/ipgroups/
8722e0e0-9cc9-4490-9660-8c9a5732fbb0
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "ipgroup": {
 "description": "",
 "id": "8722e0e0-9cc9-4490-9660-8c9a5732fbb0",
 "name": "test_ipg",
 "project_id": "45977fa2dbd7482098dd68d0d8970117",
 "ip_list": [{
 "ip": "192.168.1.123",
 "description": ""
 }, {
 "ip": "192.168.3.0/24",
 "description": "test_ip"
 }],
 "listeners": [{
 "id": "88f9c079-29cb-435a-b98f-0c5c0b90c2bd"
 }, {
 "id": "2f4c9644-d5d2-4cf8-a3c0-944239a4f58c"
 }],
 "created_at": "2018-01-16T03:19:16",
 "updated_at": "2018-01-16T03:19:16"
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;
```

```
import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowIpgroupSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowIpgroupRequest request = new ShowIpgroupRequest();
 request.withIpgroupId("{ipgroup_id}");
 try {
 ShowIpgroupResponse response = client.showIpgroup(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"
```

```
credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

try:
 request = ShowIpGroupRequest()
 request.ipgroup_id = "{ipgroup_id}"
 response = client.show_ip_group(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ShowIpGroupRequest{}
 request.IpgroupId = "{ipgroup_id}"
 response, err := client.ShowIpGroup(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.9.4 Updating an IP Address Group

### Function

This API is used to update an IP address group. All IP entries in the IP address group will be overwritten, and those that are not included in the **ip\_list** parameter in the request body will be removed.

Each IP address group can contain single IP addresses, IP address ranges, and CIDR blocks. Both IPv4 and IPv6 addresses are supported. Each IP address range must be in the format of *ip-ip*, for example, 10.12.3.1-10.12.3.10.

Note:

- 0.0.0.0 will be considered the same as 0.0.0.0/32. If you enter both 0.0.0.0 and 0.0.0.0/32, either one will be kept. 0:0:0:0:0:0:1 will be considered the same as ::1 and ::1/128. If you enter 0:0:0:0:0:0:1, ::1, and ::1/128, only one will be kept.
- Updating the entries defined by **ip\_list** will affect all associated listeners.

### Calling Method

For details, see [Calling APIs](#).

### URI

PUT /v3/{project\_id}/elb/ipgroups/{ipgroup\_id}

**Table 5-336** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                             |
|------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipgroup_id | Yes       | String | <b>Definition:</b> Specifies the ID of the IP address group to be updated.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-337** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-338** Request body parameters

| Parameter | Mandatory | Type                                       | Description                                                                                                      |
|-----------|-----------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| ipgroup   | Yes       | <a href="#">UpdateIpGroupOption</a> object | <b>Definition:</b> Specifies the request parameters for updating an IP address group.<br><b>Constraints:</b> N/A |

**Table 5-339** UpdateIpGroupOption

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                    |
|-------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description | No        | String | <b>Definition:</b> Provides supplementary information about an IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 255 characters.<br><b>Default value:</b> N/A |



| Parameter | Mandatory | Type                                                   | Description                                                                                                                                                                                                                                                                        |
|-----------|-----------|--------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name      | No        | String                                                 | <b>Definition:</b> Specifies the name of an IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 255 characters.<br><b>Default value:</b> N/A                                                                                                                        |
| ip_list   | No        | Array of <a href="#">UpdateIpGroupIpOption</a> objects | <b>Definition:</b> Specifies one or more IP entries for the IP address group.<br>Note: All IP entries in the IP address group will be overwritten, and those that are not included in the <b>ip_list</b> parameter in the request body will be removed.<br><b>Constraints:</b> N/A |

**Table 5-340** UpdateIpGroupIpOption

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip          | Yes       | String | <b>Definition:</b> Specifies the IP entries in the IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> Each entry can be an IP address, IP address range, or CIDR block. Each IP address range must be in the format of <i>ip-ip</i> , for example, 192.168.1.2-192.168.2.253 or 2001:0DB8:02de::0e12-2001:0DB8:02de::0e13. Both IPv4 and IPv6 addresses are supported.<br><b>Default value:</b> N/A |
| description | No        | String | <b>Definition:</b> Specifies remarks about the IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 255 characters.<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                 |

## Response Parameters

**Status code: 200**

**Table 5-341** Response body parameters

| Parameter  | Type                           | Description                                                                                                                                                                          |
|------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipgroup    | <a href="#">IpGroup</a> object | <b>Definition:</b> Specifies the IP address group information.                                                                                                                       |
| request_id | String                         | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-342** IpGroup

| Parameter             | Type                                         | Description                                                                                                                                                                                                                                                                |
|-----------------------|----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                    | String                                       | <b>Definition:</b> Specifies the ID of an IP address group.<br><b>Range:</b> N/A                                                                                                                                                                                           |
| name                  | String                                       | <b>Definition:</b> Specifies the name of an IP address group.<br><b>Range:</b> N/A                                                                                                                                                                                         |
| description           | String                                       | <b>Definition:</b> Provides supplementary information about an IP address group.<br><b>Range:</b> N/A                                                                                                                                                                      |
| ip_list               | Array of <a href="#">IpInfo</a> objects      | <b>Definition:</b> Specifies IP addresses in an IP address group. [] indicates any IP address.                                                                                                                                                                             |
| listeners             | Array of <a href="#">ListenerRef</a> objects | <b>Definition:</b> Specifies the IDs of listeners with which the IP address group is associated.                                                                                                                                                                           |
| project_id            | String                                       | <b>Definition:</b> Specifies the project ID of the IP address group.<br><b>Range:</b> N/A                                                                                                                                                                                  |
| enterprise_project_id | String                                       | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 0: The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |

| Parameter  | Type   | Description                                                                                                                                                               |
|------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| created_at | String | <b>Definition:</b> Specifies the time when the IP address group was created.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format. |
| updated_at | String | <b>Definition:</b> Specifies the time when the IP address group was updated.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format. |

**Table 5-343** IpInfo

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                            |
|-------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip          | String | <b>Definition:</b> Specifies the IP entries in the IP address group.<br><b>Range:</b> Each IP address range must be in the format of <i>ip-ip</i> , for example, 192.168.1.2-192.168.2.253 or 2001:0DB8:02de::0e12-2001:0DB8:02de::0e13. The end IP address must be greater than the start IP address. |
| description | String | <b>Definition:</b> Provides remarks about the IP address group.<br><b>Range:</b> 0 to 255 characters.                                                                                                                                                                                                  |

**Table 5-344** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

## Example Requests

Changing all the IP addresses in an IP address group

```
PUT https://{ELB_Endpoint}/v3/45977fa2dbd7482098dd68d0d8970117/elb/ipgroups/
8722e0e0-9cc9-4490-9660-8c9a5732fbb0
```

```
{
 "ipgroup" : {
 "name" : "test_ipg",
 "ip_list" : [{
```

```
"ip" : "192.168.1.123"
}, {
 "ip" : "192.168.3.0/24",
 "description" : "test_ip"
}]
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "ipgroup" : {
 "description" : "",
 "id" : "8722e0e0-9cc9-4490-9660-8c9a5732fbb0",
 "name" : "test_ipg",
 "project_id" : "45977fa2dbd7482098dd68d0d8970117",
 "ip_list" : [{
 "ip" : "192.168.1.123",
 "description" : ""
 }, {
 "ip" : "192.168.3.0/24",
 "description" : "test_ip"
 }],
 "listeners" : [{
 "id" : "88f9c079-29cb-435a-b98f-0c5c0b90c2bd"
 }, {
 "id" : "2f4c9644-d5d2-4cf8-a3c0-944239a4f58c"
 }],
 "created_at" : "2018-01-16T03:19:16",
 "updated_at" : "2018-01-16T03:19:16"
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Changing all the IP addresses in an IP address group

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class UpdatelpGroupSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
```

this example, set environment variables CLOUD\_SDK\_AK and CLOUD\_SDK\_SK in the local environment

```
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
UpdateIpGroupRequest request = new UpdateIpGroupRequest();
request.withIpgroupId("{ipgroup_id}");
UpdateIpGroupRequestBody body = new UpdateIpGroupRequestBody();
List<UpdateIpGroupIpOption> listIpGroupIpList = new ArrayList<>();
listIpGroupIpList.add(
 new UpdateIpGroupIpOption()
 .withIp("192.168.1.123")
);
listIpGroupIpList.add(
 new UpdateIpGroupIpOption()
 .withIp("192.168.3.0/24")
 .withDescription("test_ip")
);
UpdateIpGroupOption ipgroupbody = new UpdateIpGroupOption();
ipgroupbody.withName("test_ipg")
 .withIpList(listIpGroupIpList);
body.withIpGroup(ipgroupbody);
request.withBody(body);
try {
 UpdateIpGroupResponse response = client.updateIpGroup(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

### Changing all the IP addresses in an IP address group

# coding: utf-8

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *
```

```
if __name__ == "__main__":
```

```
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
```

```
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
```

```
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
```

```
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

try:
 request = UpdateIpGroupRequest()
 request.ipgroup_id = "{ipgroup_id}"
 listIpListIpGroup = [
 UpdateIpGroupIpOption(
 ip="192.168.1.123"
),
 UpdateIpGroupIpOption(
 ip="192.168.3.0/24",
 description="test_ip"
)
]
 ipgroupbody = UpdateIpGroupOption(
 name="test_ipg",
 ip_list=listIpListIpGroup
)
 request.body = UpdateIpGroupRequestBody(
 ipgroup=ipgroupbody
)
 response = client.update_ip_group(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Changing all the IP addresses in an IP address group

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
```

```
WithCredential(auth).
Build()

request := &model.UpdateIpGroupRequest{}
request.IpgroupId = "{ipgroup_id}"
descriptionIpList:= "test_ip"
var listIpListIpgroup = []model.UpdateIpGroupIpOption{
 {
 Ip: "192.168.1.123",
 },
 {
 Ip: "192.168.3.0/24",
 Description: &descriptionIpList,
 },
}
namelpgroup:= "test_ipg"
ipgroupbody := &model.UpdateIpGroupOption{
 Name: &namelpgroup,
 IpList: &listIpListIpgroup,
}
request.Body = &model.UpdateIpGroupRequestBody{
 Ipgroup: ipgroupbody,
}
response, err := client.UpdateIpGroup(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.9.5 Deleting an IP Address Group

### Function

This API is used to delete an IP address group. An IP address group that has been associated with a listener cannot be deleted. You need to disassociate the IP address group first.

### Calling Method

For details, see [Calling APIs](#).

## URI

DELETE /v3/{project\_id}/elb/ipgroups/{ipgroup\_id}

**Table 5-345** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| ipgroup_id | Yes       | String | <b>Definition:</b> Specifies the ID of an IP address group.                                                                                                                                                                                                                                                |

## Request Parameters

**Table 5-346** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 204**

Normal response to the DELETE operation.

None

## Example Requests

Deleting an IP address group

```
DELETE https://{ELB_Endpoint}/v3/45977fa2dbd7482098dd68d0d8970117/elb/ipgroups/8722e0e0-9cc9-4490-9660-8c9a5732fbb0
```



## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeletelpGroupSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 DeletelpGroupRequest request = new DeletelpGroupRequest();
 request.withIpgroupId("{ipgroup_id}");
 try {
 DeletelpGroupResponse response = client.deletelpGroup(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

### Python

```
coding: utf-8

import os
```

```
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeleteIpGroupRequest()
 request.ipgroup_id = "{ipgroup_id}"
 response = client.delete_ip_group(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.DeleteIpGroupRequest{}
 request.IpgroupId = "{ipgroup_id}"
```

```
response, err := client.DeleteIpGroup(request)
if err == nil {
 fmt.Printf("%v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description                              |
|-------------|------------------------------------------|
| 204         | Normal response to the DELETE operation. |

## Error Codes

See [Error Codes](#).

## 5.9.6 Updating IP Addresses in an IP Address Group

### Function

This API is used to add IP addresses to an IP address group, or update the descriptions of existing IP addresses. This API cannot be used to delete IP addresses.

Note:

- 0.0.0.0 will be considered the same as 0.0.0.0/32. If you enter both 0.0.0.0 and 0.0.0.0/32, either one will be kept. 0:0:0:0:0:0:1 will be considered the same as ::1 and ::1/128. If you enter 0:0:0:0:0:0:1, ::1, and ::1/128, only one will be kept.
- Updating the entries defined by **ip\_list** will affect all associated listeners.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/ipgroups/{ipgroup\_id}/iplist/create-or-update

**Table 5-347** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| ipgroup_id | Yes       | String | <b>Definition:</b> Specifies the ID of an IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                   |

## Request Parameters

**Table 5-348** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | No        | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-349** Request body parameters

| Parameter | Mandatory | Type                                      | Description                                                                                                                    |
|-----------|-----------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|
| ipgroup   | No        | <a href="#">UpdateIpListOption</a> object | <b>Definition:</b> Specifies the request parameters for updating IP entries in an IP address group.<br><b>Constraints:</b> N/A |

**Table 5-350** UpdateIpListOption

| Parameter   | Mandatory | Type                                                   | Description                                                                                                                                                                                                                                                                            |
|-------------|-----------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name        | No        | String                                                 | <b>Definition:</b> Specifies the name of an IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                             |
| ip_list     | No        | Array of <a href="#">UpdateIpGroupIpOption</a> objects | <b>Definition:</b> Specifies IP entries in an IP address group.<br>The specified IP entries will be added to the IP address group, or the descriptions of existing IP entries will be updated. But the existing IP entries will not be deleted or modified.<br><b>Constraints:</b> N/A |
| description | No        | String                                                 | <b>Definition:</b> Specifies remarks about the IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 255 characters.<br><b>Default value:</b> N/A                                                                                                                         |

**Table 5-351** UpdateIpGroupIpOption

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip        | Yes       | String | <b>Definition:</b> Specifies the IP entries in the IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> Each entry can be an IP address, IP address range, or CIDR block. Each IP address range must be in the format of <i>ip-ip</i> , for example, 192.168.1.2-192.168.2.253 or 2001:0DB8:02de::0e12-2001:0DB8:02de::0e13. Both IPv4 and IPv6 addresses are supported.<br><b>Default value:</b> N/A |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                    |
|-------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description | No        | String | <b>Definition:</b> Specifies remarks about the IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 255 characters.<br><b>Default value:</b> N/A |

## Response Parameters

Status code: 200

Table 5-352 Response body parameters

| Parameter  | Type                  | Description                                                                                                                                                                          |
|------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipgroup    | <b>IpGroup</b> object | <b>Definition:</b> Specifies the IP address group information.                                                                                                                       |
| request_id | String                | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

Table 5-353 IpGroup

| Parameter   | Type                                | Description                                                                                           |
|-------------|-------------------------------------|-------------------------------------------------------------------------------------------------------|
| id          | String                              | <b>Definition:</b> Specifies the ID of an IP address group.<br><b>Range:</b> N/A                      |
| name        | String                              | <b>Definition:</b> Specifies the name of an IP address group.<br><b>Range:</b> N/A                    |
| description | String                              | <b>Definition:</b> Provides supplementary information about an IP address group.<br><b>Range:</b> N/A |
| ip_list     | Array of <b>IpInfo</b> objects      | <b>Definition:</b> Specifies IP addresses in an IP address group. [] indicates any IP address.        |
| listeners   | Array of <b>ListenerRef</b> objects | <b>Definition:</b> Specifies the IDs of listeners with which the IP address group is associated.      |

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                       |
|-----------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id            | String | <b>Definition:</b> Specifies the project ID of the IP address group.<br><b>Range:</b> N/A                                                                                                                                                                                         |
| enterprise_project_id | String | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |
| created_at            | String | <b>Definition:</b> Specifies the time when the IP address group was created.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                         |
| updated_at            | String | <b>Definition:</b> Specifies the time when the IP address group was updated.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                         |

**Table 5-354** IpInfo

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                            |
|-------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip          | String | <b>Definition:</b> Specifies the IP entries in the IP address group.<br><b>Range:</b> Each IP address range must be in the format of <i>ip-ip</i> , for example, 192.168.1.2-192.168.2.253 or 2001:0DB8:02de::0e12-2001:0DB8:02de::0e13. The end IP address must be greater than the start IP address. |
| description | String | <b>Definition:</b> Provides remarks about the IP address group.<br><b>Range:</b> 0 to 255 characters.                                                                                                                                                                                                  |

**Table 5-355** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

## Example Requests

Updating IP addresses in an IP address group

POST https://{ELB\_Endpoint}/v3/45977fa2dbd7482098dd68d0d8970117/elb/ipgroups/  
8722e0e0-9cc9-4490-9660-8c9a5732fbb0/iplist/create-or-update

```
{
 "ipgroup": {
 "name": "test_ipg",
 "ip_list": [{
 "ip": "192.168.1.123",
 "description": "test"
 }, {
 "ip": "192.168.1.120",
 "description": "test update ip0"
 }]
 }
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "request_id": "46d0dcbec23987f1429491731dce0feb",
 "ipgroup": {
 "id": "353d6c3b-aca0-40b7-a059-fad8b20419e7",
 "name": "test_ipg",
 "project_id": "060576798a80d5762fafc01a9b5eedc7",
 "description": "",
 "ip_list": [{
 "ip": "192.168.1.120",
 "description": "test update ip0"
 }, {
 "ip": "192.168.1.122",
 "description": "test update ip2"
 }, {
 "ip": "192.168.1.123",
 "description": "test"
 }],
 "listeners": [{
 "id": "acef0c4d-3bd5-4cd0-8d83-c53e5b1fd652"
 }, {
 "id": "edb23879-5511-4412-8b7b-9574de7a1295"
 }],
 "created_at": "2021-11-29T10:40:30Z",
 "updated_at": "2022-12-05T13:14:01Z"
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.



## Java

### Updating IP addresses in an IP address group

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class UpdatelplistSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 UpdatelplistRequest request = new UpdatelplistRequest();
 request.withIpgroupId("{ipgroup_id}");
 UpdatelplistRequestBody body = new UpdatelplistRequestBody();
 List<UpdatelplistGroupIpOption> listIpgroupIdList = new ArrayList<>();
 listIpgroupIdList.add(
 new UpdatelplistGroupIpOption()
 .withIp("192.168.1.123")
 .withDescription("test")
);
 listIpgroupIdList.add(
 new UpdatelplistGroupIpOption()
 .withIp("192.168.1.120")
 .withDescription("test update ip0")
);
 UpdatelplistOption ipgroupbody = new UpdatelplistOption();
 ipgroupbody.withName("test_ipg")
 .withIpList(listIpgroupIdList);
 body.withIpgroup(ipgroupbody);
 request.withBody(body);
 try {
 UpdatelplistResponse response = client.updatelplist(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 }
 }
}
```

```
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

## Python

### Updating IP addresses in an IP address group

```
coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = UpdateIpListRequest()
 request.ipgroup_id = "{ipgroup_id}"
 listIpListIpGroup = [
 UpdateIpGroupIpOption(
 ip="192.168.1.123",
 description="test"
),
 UpdateIpGroupIpOption(
 ip="192.168.1.120",
 description="test update ip0"
)
]
 ipgroupbody = UpdateIpListOption(
 name="test_ipg",
 ip_list=listIpListIpGroup
)
 request.body = UpdateIpListRequestBody(
 ipgroup=ipgroupbody
)
 response = client.update_ip_list(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Updating IP addresses in an IP address group

```
package main
```

```
import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.UpdateIpListRequest{}
 request.IpgroupId = "{ipgroup_id}"
 descriptionIpList := "test"
 descriptionIpList1 := "test update ip0"
 var listIpListIpgroup = []model.UpdateIpGroupIpOption{
 {
 Ip: "192.168.1.123",
 Description: &descriptionIpList,
 },
 {
 Ip: "192.168.1.120",
 Description: &descriptionIpList1,
 },
 }
 nameIpgroup := "test_ipg"
 ipgroupbody := &model.UpdateIpListOption{
 Name: &nameIpgroup,
 IpList: &listIpListIpgroup,
 }
 request.Body = &model.UpdateIpListRequestBody{
 Ipgroup: ipgroupbody,
 }
 response, err := client.UpdateIpList(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.9.7 Deleting IP Addresses from an IP Address Group

### Function

This API is used to delete IP addresses from an IP address group.

Note: Deleting IP addresses from an IP address group will affect all associated listeners.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/ipgroups/{ipgroup\_id}/iplist/batch-delete

**Table 5-356** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| ipgroup_id | Yes       | String | <b>Definition:</b> Specifies the ID of an IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                   |

## Request Parameters

**Table 5-357** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | No        | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-358** Request body parameters

| Parameter | Mandatory | Type                                           | Description                                                                                                        |
|-----------|-----------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| ipgroup   | No        | <a href="#">BatchDeleteIpListOption</a> object | <b>Definition:</b> Specifies the request parameters for deleting IP entries in batches.<br><b>Constraints:</b> N/A |

**Table 5-359** BatchDeleteIpListOption

| Parameter | Mandatory | Type                                       | Description                                                                                     |
|-----------|-----------|--------------------------------------------|-------------------------------------------------------------------------------------------------|
| ip_list   | No        | Array of <a href="#">IpGroupIp</a> objects | <b>Definition:</b> Specifies the IP entries in the IP address group.<br><b>Constraints:</b> N/A |

**Table 5-360** IpGroupIp

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                  |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip        | Yes       | String | <b>Definition:</b> Specifies the IP entries to be deleted from the IP address group. Each IP entry can be a single IP address, CIDR block, or IP address range.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

Status code: 200

**Table 5-361** Response body parameters

| Parameter  | Type                  | Description                                                                                                                                                                          |
|------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipgroup    | <b>IpGroup</b> object | <b>Definition:</b> Specifies the IP address group information.                                                                                                                       |
| request_id | String                | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-362** IpGroup

| Parameter   | Type                                | Description                                                                                           |
|-------------|-------------------------------------|-------------------------------------------------------------------------------------------------------|
| id          | String                              | <b>Definition:</b> Specifies the ID of an IP address group.<br><b>Range:</b> N/A                      |
| name        | String                              | <b>Definition:</b> Specifies the name of an IP address group.<br><b>Range:</b> N/A                    |
| description | String                              | <b>Definition:</b> Provides supplementary information about an IP address group.<br><b>Range:</b> N/A |
| ip_list     | Array of <b>IpInfo</b> objects      | <b>Definition:</b> Specifies IP addresses in an IP address group. [] indicates any IP address.        |
| listeners   | Array of <b>ListenerRef</b> objects | <b>Definition:</b> Specifies the IDs of listeners with which the IP address group is associated.      |
| project_id  | String                              | <b>Definition:</b> Specifies the project ID of the IP address group.<br><b>Range:</b> N/A             |

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                       |
|-----------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | String | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |
| created_at            | String | <b>Definition:</b> Specifies the time when the IP address group was created.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                         |
| updated_at            | String | <b>Definition:</b> Specifies the time when the IP address group was updated.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.                                                                                                         |

**Table 5-363** IpInfo

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                            |
|-------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip          | String | <b>Definition:</b> Specifies the IP entries in the IP address group.<br><b>Range:</b> Each IP address range must be in the format of <i>ip-ip</i> , for example, 192.168.1.2-192.168.2.253 or 2001:0DB8:02de::0e12-2001:0DB8:02de::0e13. The end IP address must be greater than the start IP address. |
| description | String | <b>Definition:</b> Provides remarks about the IP address group.<br><b>Range:</b> 0 to 255 characters.                                                                                                                                                                                                  |

**Table 5-364** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

## Example Requests

Deleting IP addresses from an IP address group

```
POST https://{ELB_Endpoint}/v3/45977fa2dbd7482098dd68d0d8970117/elb/ipgroups/
8722e0e0-9cc9-4490-9660-8c9a5732fbb0/iplist/batch-delete
```

```
{
 "ipgroup" : {
 "ip_list" : [{
 "ip" : "192.168.1.123"
 }, {
 "ip" : "192.168.3.0/24"
 }]
 }
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "ipgroup" : {
 "description" : "",
 "id" : "8722e0e0-9cc9-4490-9660-8c9a5732fbb0",
 "name" : "test_ipg",
 "project_id" : "45977fa2dbd7482098dd68d0d8970117",
 "ip_list" : [{
 "ip" : "192.168.1.122",
 "description" : ""
 }],
 "listeners" : [{
 "id" : "88f9c079-29cb-435a-b98f-0c5c0b90c2bd"
 }, {
 "id" : "2f4c9644-d5d2-4cf8-a3c0-944239a4f58c"
 }],
 "created_at" : "2018-01-16T03:19:16",
 "updated_at" : "2018-01-16T03:19:16"
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Deleting IP addresses from an IP address group

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchDeleteIpListSolution {
```



```
public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 BatchDeleteIpListRequest request = new BatchDeleteIpListRequest();
 request.withIpgroupId("{ipgroup_id}");
 BatchDeleteIpListRequestBody body = new BatchDeleteIpListRequestBody();
 List<IpGroupIp> listIpGroupIpList = new ArrayList<>();
 listIpGroupIpList.add(
 new IpGroupIp()
 .withIp("192.168.1.123")
);
 listIpGroupIpList.add(
 new IpGroupIp()
 .withIp("192.168.3.0/24")
);
 BatchDeleteIpListOption ipgroupbody = new BatchDeleteIpListOption();
 ipgroupbody.withIpList(listIpGroupIpList);
 body.withIpGroup(ipgroupbody);
 request.withBody(body);
 try {
 BatchDeleteIpListResponse response = client.batchDeleteIpList(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

## Python

### Deleting IP addresses from an IP address group

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
```

```
In this example, AK and SK are stored in environment variables for authentication. Before running this
example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

try:
 request = BatchDeleteIpListRequest()
 request.ipgroup_id = "{ipgroup_id}"
 listIpListIpGroup = [
 IpGroupIp(
 ip="192.168.1.123"
),
 IpGroupIp(
 ip="192.168.3.0/24"
)
]
 ipgroupbody = BatchDeleteIpListOption(
 ip_list=listIpListIpGroup
)
 request.body = BatchDeleteIpListRequestBody(
 ipgroup=ipgroupbody
)
 response = client.batch_delete_ip_list(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Deleting IP addresses from an IP address group

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
```

```
elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.BatchDeleteIpListRequest{}
request.IpgroupId = "{ipgroup_id}"
var listIpListIpgroup = []model.IpGroupIp{
 {
 Ip: "192.168.1.123",
 },
 {
 Ip: "192.168.3.0/24",
 },
}
ipgroupbody := &model.BatchDeleteIpListOption{
 IpList: &listIpListIpgroup,
}
request.Body = &model.BatchDeleteIpListRequestBody{
 Ipgroup: ipgroupbody,
}
response, err := client.BatchDeleteIpList(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.9.8 Querying the Listeners Associated with an IP Address Group

### Function

This API is used to query the listeners associated with an IP address group.

### Calling Method

For details, see [Calling APIs](#).

## URI

GET /v3/{project\_id}/elb/ipgroups/{ipgroup\_id}/related-listeners

**Table 5-365** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| ipgroup_id | Yes       | String | <b>Definition:</b> Specifies the ID of an IP address group.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                   |

## Request Parameters

**Table 5-366** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-367** Response body parameters

| Parameter | Type                                         | Description                                                                                 |
|-----------|----------------------------------------------|---------------------------------------------------------------------------------------------|
| listeners | Array of <a href="#">ListenerRef</a> objects | <b>Definition:</b> Specifies the IDs of all listeners associated with the IP address group. |

**Table 5-368** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

## Example Requests

Querying the listeners associated with an IP address group

```
GET https://{ELB_Endpoint}/v3/45977fa2dbd7482098dd68d0d8970117/elb/ipgroups/8722e0e0-9cc9-4490-9660-8c9a5732fbb0/related-listeners
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "listeners": [{
 "id": "10000000-0000-0000-0000-000000000001"
 }, {
 "id": "10000000-0000-0000-0000-000000000002"
 }, {
 "id": "10000000-0000-0000-0000-000000000003"
 }]
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowIpGroupRelatedListenersSolution {
```

```
public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowIpgroupRelatedListenersRequest request = new ShowIpgroupRelatedListenersRequest();
 request.withIpgroupId("{ipgroup_id}");
 try {
 ShowIpgroupRelatedListenersResponse response = client.showIpgroupRelatedListeners(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.getenv("CLOUD_SDK_AK")
 sk = os.getenv("CLOUD_SDK_SK")
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ShowIpgroupRelatedListenersRequest()
 request.ipgroup_id = "{ipgroup_id}"
```

```
response = client.show_ip_group_related_listeners(request)
print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ShowIpGroupRelatedListenersRequest{}
 request.IpgroupId = "{ipgroup_id}"
 response, err := client.ShowIpGroupRelatedListeners(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.10 Listener

### 5.10.1 Adding a Listener

#### Function

This API is used to add a listener to a shared or dedicated load balancer.

#### Constraints

When adding a listener, note the following:

- For load balancing at Layer 4, the listener protocol can be TCP, UDP, or TLS.
- For load balancing at Layer 7, the listener protocol can be HTTP, HTTPS or QUIC.
- For load balancing both at Layer 4 and Layer 7, the listener protocol can be TCP, UDP, TLS, HTTP, HTTPS, or QUIC.
- When adding a listener to a gateway load balancer, the listener protocol can only be IP.

#### Calling Method

For details, see [Calling APIs](#).

#### URI

POST /v3/{project\_id}/elb/listeners

**Table 5-369** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |



## Request Parameters

**Table 5-370** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-371** Request body parameters

| Parameter | Mandatory | Type                        | Description                                                                                           |
|-----------|-----------|-----------------------------|-------------------------------------------------------------------------------------------------------|
| listener  | Yes       | CreateListenerOption object | <b>Definition:</b> Specifies the request parameters for adding a listener.<br><b>Constraints:</b> N/A |

**Table 5-372** CreateListenerOption

| Parameter       | Mandatory | Type    | Description                                                                                                                                                                                                                                                                  |
|-----------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up  | No        | Boolean | <b>Definition:</b> Specifies the administrative status of the listener.<br><b>Constraints:</b> The value can only be <b>true</b> .<br><b>Range:</b> <b>true</b> indicates the listener is in use.<br><b>Default value:</b> <b>true</b>                                       |
| default_pool_id | No        | String  | <b>Definition:</b> Specifies the ID of the default backend server group of the listener. If there is no matched forwarding policy, requests will be routed to the default backend server group.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter                   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| client_ca_tls_container_ref | No        | String | <b>Definition:</b> Specifies the ID of the CA certificate used by the listener.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is available only when <b>type</b> is set to <b>client</b>.</li><li>• This parameter is not available if the listener protocol is <b>QUIC</b>.</li><li>• To enable mutual authentication, both <b>client_ca_tls_container_ref</b> and <b>default_tls_container_ref</b> are required.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A                                          |
| default_tls_container_ref   | No        | String | <b>Definition:</b> Specifies the ID of the server certificate used by the listener.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• <b>type</b> must be <b>server</b>.</li><li>• This parameter is mandatory when the listener protocol is HTTPS, TLS, or QUIC.</li><li>• Both <b>client_ca_tls_container_ref</b> and <b>default_tls_container_ref</b> are required for mutual authentication. Only <b>default_tls_container_ref</b> is required for one-way authentication.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| description                 | No        | String | <b>Definition:</b> Provides supplementary information about the listener.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                               |

| Parameter       | Mandatory | Type                                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------|-----------|----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| http2_enable    | No        | Boolean                                      | <p><b>Definition:</b> Specifies whether to allow clients to use HTTP/2 to communicate with the load balancer for higher access performance.</p> <p>However, the load balancer still uses HTTP/1.x to forward requests to backend servers.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is valid only for HTTPS listeners.</li><li>• This parameter is not available for QUIC listeners and the response is fixed at <b>true</b>.</li><li>• You can configure this parameter for listeners with other protocols, but it will not take effect.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>true:</b> Enable this option.</li><li>• <b>false:</b> Disable this option.</li></ul> <p><b>Default value:</b> false</p> |
| insert_headers  | No        | <a href="#">ListenerInsertHeaders</a> object | <p><b>Definition:</b> Specifies the HTTP headers that can transmit required information to backend servers. For example, you can use the <b>X-Forwarded-ELB-IP</b> header to transmit the load balancer EIP to backend servers.</p> <p><b>Constraints:</b> This parameter can be configured only for HTTP, HTTPS, and QUIC listeners.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| loadbalancer_id | Yes       | String                                       | <p><b>Definition:</b> Specifies the ID of the load balancer that the listener is added to.</p> <p><b>Constraints:</b> A listener can be added to only one load balancer.</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name       | No        | String | <b>Definition:</b> Specifies the name of the listener.<br><b>Note:</b> If you leave the listener name empty, you cannot locate it in the listener list and view its details.<br><b>Range:</b> The value can contain 0 to 255 characters.<br><b>Default value:</b> N/A                                                                                                                      |
| project_id | No        | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A<br><b>NOTE</b><br>This parameter is invalid. The project ID in the URL is used. |

| Parameter     | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol      | Yes       | String  | <p><b>Definition:</b> Specifies the protocol of the listener.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>Protocol used by HTTPS listeners added to a shared load balancer can only be set to <b>TERMINATED_HTTPS</b>. If <b>HTTPS</b> is passed, the value will be automatically changed to <b>TERMINATED_HTTPS</b>.</li><li>Protocol used by HTTPS listeners added to a dedicated load balancer can only be set to <b>HTTPS</b>. If <b>TERMINATED_HTTPS</b> is passed, the value will be automatically changed to <b>HTTPS</b>.</li></ul> <p><b>Range:</b> TCP, UDP, HTTP, HTTPS, TERMINATED_HTTPS, QUIC, IP, or TLS. IP is only available for listeners that will be added to gateway load balancers.</p> <p><b>Default value:</b> N/A</p> |
| protocol_port | No        | Integer | <p><b>Definition:</b> Specifies the port used by the listener.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>QUIC listeners cannot use port 4789, and cannot use the same port as UDP listeners.</li><li>If this parameter is set to <b>0</b>, <b>port_ranges</b> is required.</li><li>The port of HTTP or TERMINATED_HTTPS listeners added to a shared load balancer cannot be 21.</li></ul> <p><b>Range:</b> 0 to 65535</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                  |

| Parameter          | Mandatory | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------|-----------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| sni_container_refs | No        | Array of strings                     | <b>Definition:</b> Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• QUIC listeners support only RSA certificates.</li><li>• Each domain name of an SNI certificate must be unique.</li><li>• The total number of domain names of all SNI certificates cannot exceed 200.</li></ul> <b>Range:</b> 0 to 50<br><b>Default value:</b> N/A |
| sni_match_algo     | No        | String                               | <b>Definition:</b> Specifies how wildcard domain name matches with the SNI certificates used by the listener.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>longest_suffix:</b> indicates longest suffix match.</li><li>• <b>wildcard:</b> indicates wildcard match.</li></ul> <b>Default value:</b> wildcard                                                                                                  |
| tags               | No        | Array of <a href="#">Tag</a> objects | <b>Definition:</b> Lists the tags.<br><b>Constraints:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                           |

| Parameter          | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls_ciphers_policy | No        | String | <p><b>Definition:</b> Specifies the security policy used by the listener.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is available only for HTTPS listeners added to a dedicated load balancer.</li><li>• This parameter is not available for QUIC listeners.</li><li>• If both <b>security_policy_id</b> and <b>tls_ciphers_policy</b> are specified, only <b>security_policy_id</b> takes effect.</li><li>• The encryption suite priority from the highest to lowest is ECC suite, RSA suite, and finally TLS 1.3 suite (supporting both ECC and RSA).</li></ul> <p><b>Range:</b> tls-1-0-inherit, tls-1-0, tls-1-1, tls-1-2, tls-1-2-strict, tls-1-2-fs, tls-1-0-with-1-3, tls-1-2-fs-with-1-3, hybrid-policy-1-0, or tls-1-2-strict-no-cbc. The default value is tls-1-2.</p> <p><b>Default value:</b> N/A</p> |

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| security_policy_id  | No        | String  | <p><b>Definition:</b> Specifies the ID of the custom security policy.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is available only for HTTPS listeners added to a dedicated load balancer.</li><li>• This parameter is not available for QUIC listeners.</li><li>• If both <b>security_policy_id</b> and <b>tls_ciphers_policy</b> are specified, only <b>security_policy_id</b> takes effect.</li><li>• The encryption suite priority from highest to lowest is ECC suite, RSA suite, and finally TLS 1.3 suite (supporting both ECC and RSA).</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                         |
| enable_member_retry | No        | Boolean | <p><b>Definition:</b> Specifies whether to enable health check retries for backend servers.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If a shared load balancer is associated, this parameter is available only when <b>protocol</b> is set to <b>HTTP</b> or <b>TERMINATED_HTTPS</b>.</li><li>• If a dedicated load balancer is associated, this parameter is available only when <b>protocol</b> is set to <b>HTTP</b>, <b>HTTPS</b>, or <b>QUIC</b>.</li></ul> <p><b>Range:</b> <b>true</b> indicates health check retries will be enabled. <b>false</b> indicates health check retries will be disabled.</p> <p><b>Default value:</b> <b>true</b></p> |



| Parameter         | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| keepalive_timeout | No        | Integer | <p><b>Definition:</b> Specifies the idle timeout duration, in seconds. If the load balancer receives no requests within the idle timeout duration, it will disconnect the connection with the client and establish a new connection when there is a new request.</p> <p><b>Constraints:</b> This parameter is not supported by UDP listeners of shared load balancers.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• For TCP, UDP and IP listeners, the value ranges from 10s to 4000s. The default value is 300s.</li><li>• For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0s to 4000s. The default value is 60s.</li></ul> <p><b>Default value:</b> N/A</p> |
| client_timeout    | No        | Integer | <p><b>Definition:</b> Specifies the timeout duration for waiting for a response from a client, in seconds. There are two situations:</p> <ul style="list-style-type: none"><li>• If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted.</li><li>• If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected.</li></ul> <p><b>Constraints:</b> This parameter is available only for HTTP and HTTPS listeners.</p> <p><b>Range:</b> 1-300s</p> <p><b>Default value:</b> 60s</p>                                                 |

| Parameter      | Mandatory | Type                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|-----------|------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_timeout | No        | Integer                            | <b>Definition:</b> Specifies the timeout duration for waiting for a response from a backend server, in seconds. If the backend server fails to respond after the timeout duration elapses, the load balancer will stop waiting and return HTTP 504 Gateway Timeout to the client.<br><b>Constraints:</b> This parameter is available only for HTTP and HTTPS listeners.<br><b>Range:</b> 1-300s<br><b>Default value:</b> 60s |
| ipgroup        | No        | CreateListenerIpGroupOption object | <b>Definition:</b> Specifies the IP address group associated with the listener. The value can be <b>null</b> , or left blank, or be an empty JSON structure ({}), indicating that no IP address group is associated with the listener. <b>ipgroup_id</b> is also required if you want to associate an IP address group with the listener.<br><b>Constraints:</b> N/A                                                         |

| Parameter                    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| transparent_client_ip_enable | No        | Boolean | <p><b>Definition:</b> Specifies whether to pass source IP addresses of the clients to backend servers.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is available only for TCP and UDP listeners of shared load balancers.</li><li>• If this function is enabled, the load balancer communicates with backend servers using client IP addresses. Ensure that security group rules and access control policies are correctly configured.</li><li>• If this function is enabled, a server cannot serve as both a backend server and a client.</li><li>• If this function is enabled, the backend server specifications cannot be changed.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• TCP or UDP listeners of shared load balancers: The value can be <b>true</b> or <b>false</b>, and the default value is <b>false</b> if this parameter is not passed.</li><li>• HTTP or HTTPS listeners of shared load balancers: The value can only be <b>true</b>, and the default value is <b>true</b> if this parameter is not passed.</li><li>• All listeners of dedicated load balancers: The value can only be <b>true</b>, and the default value is <b>true</b> if this parameter is not passed.</li></ul> <p><b>Default value:</b> N/A</p> |

| Parameter             | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                           |
|-----------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| proxy_protocol_enable | No        | Boolean | <p><b>Definition:</b> Specifies whether to enable ProxyProtocol to pass the source IP addresses of the clients to backend servers.</p> <p><b>Constraints:</b> This parameter is available only for TLS listeners and does not take effect for other types of listeners.</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

| Parameter               | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enhance_l7policy_enable | No        | Boolean | <p><b>Definition:</b> Specifies whether to enable advanced forwarding. If advanced forwarding is enabled, more flexible forwarding policies and rules are supported.</p> <p>The following scenarios are supported:</p> <ul style="list-style-type: none"><li>• <b>action</b> can be set to <b>REDIRECT_TO_URL</b> (requests will be redirected to another URL) or <b>Fixed_RESPONSE</b> (a fixed response body will be returned to clients).</li><li>• Parameters <b>priority</b>, <b>redirect_url_config</b>, and <b>fixed_response_config</b> can be specified in a forwarding policy.</li><li>• <b>type</b> can be set to <b>METHOD</b>, <b>HEADER</b>, <b>QUERY_STRING</b>, or <b>SOURCE_IP</b> for a forwarding rule.</li><li>• If <b>type</b> is set to <b>HOST_NAME</b> for a forwarding rule, the value of the forwarding rule supports wildcard asterisks (*).</li><li>• Parameter <b>conditions</b> can be specified for forwarding rules.</li></ul> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• Advanced forwarding cannot be disabled once it is enabled.</li><li>• If advanced forwarding is enabled, forwarding policy priorities are defined by <b>priority</b>. The priorities are not automatically sorted. For details, see the description of the <b>priority</b> parameter in the forwarding policy.</li></ul> |

| Parameter         | Mandatory | Type                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------|-----------|---------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |           |                                       | <b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> false                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| quic_config       | No        | CreateListenerQuicConfigOption object | <b>Definition:</b> Specifies the QUIC configuration for the current listener.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is valid only when <b>protocol</b> is set to <b>HTTPS</b>.</li><li>• For a TCP, UDP, HTTP, or QUIC listener, if this parameter is not left blank, an error will be reported.</li></ul> <b>NOTE</b><br>Suppose the client sends an HTTP request to the server and carries information indicating that the QUIC protocol is supported. If <b>enable_quic_upgrade</b> is set to <b>true</b> , the QUIC port and version information supported by the server will be included in the response header.<br>When the client sends both HTTPS and QUIC requests, if the QUIC request is sent and responded, the client will use the QUIC protocol to communicate with the backend servers. |
| protection_status | No        | String                                | <b>Definition:</b> Specifies the protection status.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): The resource is not protected.</li><li>• <b>consoleProtection</b>: Modifications are not allowed on the console.</li></ul> <b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Parameter         | Mandatory | Type                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------------|-----------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_reason | No        | String                            | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Constraints:</b> This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>).<br><b>Default value:</b> N/A                                                                                                                                  |
| gzip_enable       | No        | Boolean                           | <b>Definition:</b> Specifies whether to enable <b>gzip_enable</b> for a load balancer.<br><b>Constraints:</b> This parameter can be configured only for HTTP, HTTPS, and QUIC listeners.<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> <b>false</b>                                                                                                                             |
| port_ranges       | No        | Array of <b>PortRange</b> objects | <b>Definition:</b> Specifies one or more port ranges, including the start and end port numbers. A maximum of 10 port ranges can be specified. Port ranges cannot overlap with each other.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter can be specified only when <b>protocol_port</b> is set to <b>0</b> or <b>protocol_port</b> is not specified.</li><li>• This parameter is available for TCP, UDP, or TLS listeners.</li></ul> |

| Parameter             | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ssl_early_data_enable | No        | Boolean | <b>Definition:</b> Specifies whether to enable zero round trip time resumption (0-RTT) for listeners.<br><b>Constraints:</b> This option can be configured only for HTTPS listeners and depends on the TLS 1.3 security policy protocols. If <b>ssl_early_data</b> is set to <b>true</b> , there may be replay attacks.<br><b>Range:</b> <b>true</b> or <b>false</b><br><b>Default value:</b> <b>false</b> |
| cps                   | No        | Integer | <b>Definition:</b> Specifies the maximum number of new connections that a listener can handle per second.<br><b>Constraints:</b> If the value is greater than the number defined in the load balancer flavors, the latter is used as the limit.<br><b>Range:</b> 0 to 1000000<br><b>Default value:</b> <b>0</b> , indicating that the number is not limited.                                               |
| connection            | No        | Integer | <b>Definition:</b> Specifies the maximum number of concurrent connections that a listener can handle per second.<br><b>Constraints:</b> If the value is greater than the number defined in the load balancer flavors, the latter is used as the limit.<br><b>Range:</b> 0 to 1000000<br><b>Default value:</b> <b>0</b> , indicating that the number is not limited.                                        |



| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| nat64_enable | No        | Boolean | <b>Definition:</b> Specifies whether to translate between IPv4 and IPv6 addresses. This option allows a client to access IPv4 or IPv6 backend servers by accessing the IPv4 or IPv6 address of a load balancer.<br><b>Constraints:</b> This option can only be enabled for TCP and UDP listeners. <b>nat64_enable</b> is mutually exclusive with <b>transparent_client_ip_enable</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Enable <b>nat64_enable</b>.</li><li>• <b>false:</b> Disable <b>nat64_enable</b>.</li></ul> <b>Default value:</b> false |

**Table 5-373** ListenerInsertHeaders

| Parameter            | Mandatory | Type    | Description                                                                                                                                                                                       |
|----------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-ELB-IP   | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-ELB-IP</b> is set to <b>true</b> , the load balancer EIP will be stored in the <b>X-Forwarded-ELB-IP</b> header and passed to backend servers.               |
| X-Forwarded-Port     | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-Port</b> is set to <b>true</b> , the listening port of the load balancer will be stored in the <b>X-Forwarded-Port</b> header and passed to backend servers. |
| X-Forwarded-For-Port | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-For-Port</b> is set to <b>true</b> , the source port of the client will be stored in the HTTP header and passed to backend servers.                          |
| X-Forwarded-Host     | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-Host</b> is set to <b>true</b> , the client host can be stored in the <b>X-Forwarded-Host</b> header and passed to backend servers.                          |

| Parameter                      | Mandatory | Type    | Description                                                                                                                                                                                                                  |
|--------------------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Proto              | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-Proto</b> is set to <b>true</b> , the listener protocol of the load balancer can be stored in the <b>X-Forwarded-Proto</b> header and passed to backend servers.                        |
| X-Real-IP                      | No        | Boolean | <b>Definition:</b> If <b>X-Real-IP</b> is set to <b>true</b> , the client IP address can be stored in the <b>X-Real-IP</b> header and passed to backend servers.                                                             |
| X-Forwarded-ELB-ID             | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-ELB-ID</b> is set to <b>true</b> , the load balancer ID can be stored in the <b>X-Forwarded-ELB-ID</b> header and passed to backend servers.                                            |
| X-Forwarded-TLS-Certificate-ID | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Certificate-ID</b> is set to <b>true</b> , the certificate ID of the load balancer can be stored in the <b>X-Forwarded-TLS-Certificate-ID</b> header and passed to backend servers. |
| X-Forwarded-TLS-Protocol       | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Protocol</b> is set to <b>true</b> , the algorithm protocol of the load balancer can be stored in the <b>X-Forwarded-TLS-Protocol</b> header and passed to backend servers.         |
| X-Forwarded-TLS-Cipher         | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Cipher</b> is set to <b>true</b> , the algorithm suite of the load balancer can be stored in the <b>X-Forwarded-TLS-Cipher</b> header and passed to backend servers.                |

| Parameter                      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-TLS-Protocol-alias | No        | String | <p><b>Definition:</b> Specifies the name of the X-Forwarded-TLS-Protocol header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-TLS-Protocol</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |
| X-Forwarded-TLS-Cipher-alias   | No        | String | <p><b>Definition:</b> Specifies the name of the X-Forwarded-TLS-Cipher header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-TLS-Cipher</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>     |

| Parameter                               | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-For-Processing-Mode         | No        | String  | <p><b>Definition:</b> Specifies how the X-Forwarded-For header will be handled.</p> <ul style="list-style-type: none"><li>• <b>append:</b> The IP address of the last hop will be included in the X-Forwarded-For header and sent to the backend server.</li><li>• <b>remove:</b> The X-Forwarded-For header will be deleted before the request is sent to the backend server, regardless of whether the request carries the X-Forwarded-For header.</li><li>• <b>preserve:</b> The existing X-Forwarded-For header will be retained in the request.</li></ul> <p><b>Constraints:</b> This parameter is available only for HTTP, HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>append</b>, <b>remove</b>, or <b>preserve</b></p> <p><b>Default value:</b> <b>append</b></p> |
| X-Forwarded-Clientcert-subjectdn-enable | No        | Boolean | <p><b>Definition:</b> Specifies whether to transfer the owner information of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-subjectdn header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                                                                                                                                                                                                                                                                                                                                                               |

| Parameter                              | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------------------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-subjectdn-alias | No        | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-subjectdn header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-subjectdn-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |
| X-Forwarded-Clientcert-issuerdn-enable | No        | Boolean | <p><b>Definition:</b> Specifies whether to transfer the issuer information of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-issuerdn header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                              |
| X-Forwarded-Clientcert-issuerdn-alias  | No        | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-issuerdn header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-issuerdn-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>   |

| Parameter                                  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-fingerprint-enable  | No        | Boolean | <b>Definition:</b> Specifies whether to transfer the fingerprint of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-fingerprint header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                            |
| X-Forwarded-Clientcert-fingerprint-alias   | No        | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-fingerprint header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-fingerprint-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-clientverify-enable | No        | Boolean | <b>Definition:</b> Specifies whether to transfer the verification result of the client certificate that accesses the load balancer through the <b>X-Forwarded-Clientcert-clientverify</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                            |

| Parameter                                  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-clientverify-alias  | No        | String  | <b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert-clientverify</b> header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-clientverify-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-serialnumber-enable | No        | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate serial number through the <b>X-Forwarded-Clientcert-serialnumber</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> <b>true</b> or <b>false</b><br><b>Default value:</b> <b>false</b>                                                                                                             |
| X-Forwarded-Clientcert-serialnumber-alias  | No        | String  | <b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert-serialnumber</b> header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-serialnumber-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |

| Parameter                             | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-enable         | No        | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate content through the <b>X-Forwarded-Clientcert</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                                                |
| X-Forwarded-Clientcert-alias          | No        | String  | <b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert</b> header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, QUIC, and TLS listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-ciphers-enable | No        | Boolean | <b>Definition:</b> Specifies whether to transfer the TLS cipher suite supported by the client through the <b>X-Forwarded-Clientcert-ciphers</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                          |



| Parameter                            | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-ciphers-alias | No        | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-ciphers header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-ciphers-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |
| X-Forwarded-Clientcert-end-enable    | No        | Boolean | <p><b>Definition:</b> Specifies whether to transfer the client certificate expiration date through the <b>X-Forwarded-Clientcert-end</b> header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                                                                  |
| X-Forwarded-Clientcert-end-alias     | No        | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-end header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-end-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, QUIC, and TLS listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>    |

| Parameter                            | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Alpn-Protocol-enable | No        | Boolean | <b>Definition:</b> Specifies whether to use the X-Forwarded-Tls-Alpn-Protocol header to transfer the application protocol that the client and the load balancer negotiate to use during SSL handshakes.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                            |
| X-Forwarded-Tls-Alpn-Protocol-alias  | No        | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Tls-Alpn-Protocol header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Alpn-Protocol-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Tls-Sni-enable           | No        | Boolean | <b>Definition:</b> Specifies whether to transfer the domain name of the SNI certificate accessed by the client through the <b>X-Forwarded-Tls-Sni</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                      |

| Parameter                  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Sni-alias  | No        | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Tls-Sni</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Sni-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |
| X-Forwarded-Tls-Ja3-enable | No        | Boolean | <p><b>Definition:</b> Specifies whether to transfer the Ja3 fingerprint of the client that accesses the load balancer through the <b>X-Forwarded-Tls-Ja3</b> header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                               |
| X-Forwarded-Tls-Ja3-alias  | No        | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Tls-Ja3</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Ja3-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Ja4-enable | No        | Boolean | <b>Definition:</b> Specifies whether to transfer the Ja4 fingerprint of the client that accesses the load balancer through the X-Forwarded-Tls-Ja4 header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                     |
| X-Forwarded-Tls-Ja4-alias  | No        | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Tls-Ja4 header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Ja4-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |

**Table 5-374** Tag

| Parameter | Mandatory | Type   | Description                                                      |
|-----------|-----------|--------|------------------------------------------------------------------|
| key       | No        | String | <b>Definition:</b> Specifies the tag key.<br><b>Range:</b> N/A   |
| value     | No        | String | <b>Definition:</b> Specifies the tag value.<br><b>Range:</b> N/A |

**Table 5-375** CreateListenerIpGroupOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipgroup_id     | Yes       | String  | <b>Definition:</b> Specifies the ID of the IP address group associated with the listener.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>If <b>ip_list</b> is set to an empty array <b>[]</b> and <b>type</b> to <b>whitelist</b>, no IP addresses are allowed to access the listener.</li><li>If <b>ip_list</b> is set to an empty array <b>[]</b> and <b>type</b> to <b>blacklist</b>, any IP address is allowed to access the listener.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| enable_ipgroup | No        | Boolean | <b>Definition:</b> Specifies whether to enable access control.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li><b>true</b> (default): Enable access control.</li><li><b>false</b>: Disable access control.</li></ul> <b>Default value:</b> N/A                                                                                                                                                                                                                                  |
| type           | No        | String  | <b>Definition:</b> Specifies how access to the listener is controlled.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li><b>white</b>: A whitelist will be configured. Only IP addresses in the whitelist can access the listener.</li><li><b>black</b>: A blacklist will be configured. IP addresses in the blacklist are not allowed to access the listener.</li></ul> <b>Default value:</b> white                                                                              |

**Table 5-376** CreateListenerQuicConfigOption

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                           |
|---------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| quic_listener_id    | Yes       | String  | <b>Definition:</b> Specifies the ID of the QUIC listener.<br><b>Constraints:</b> The listener specified by <b>quic_listener_id</b> must exist. The listener protocol must be <b>QUIC</b> and cannot be set to <b>null</b> . Otherwise, it will conflict with <b>enable_quic_upgrade</b> .<br><b>Range:</b> N/A<br><b>Default value:</b> N/A           |
| enable_quic_upgrade | No        | Boolean | <b>Definition:</b> Specifies whether to enable QUIC upgrade. If this option is enabled, HTTPS listeners will be upgraded to QUIC listeners.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>True:</b> Enable QUIC upgrade.</li><li>• <b>False:</b> Disable QUIC upgrade.</li></ul> <b>Default value:</b> false |

**Table 5-377** PortRange

| Parameter  | Mandatory | Type    | Description                                                                                                                                                                                      |
|------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| start_port | No        | Integer | <b>Definition:</b> Specifies the start port number.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1-65535<br><b>Default value:</b> N/A                                                             |
| end_port   | No        | Integer | <b>Definition:</b> Specifies the end port number.<br><b>Constraints:</b> The value must be greater than or equal to the start port number.<br><b>Range:</b> 1-65535<br><b>Default value:</b> N/A |

## Response Parameters

Status code: 201

**Table 5-378** Response body parameters

| Parameter  | Type                   | Description                                                                                                                                                                          |
|------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                 | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| listener   | <b>Listener</b> object | <b>Definition:</b> Specifies the listener.                                                                                                                                           |

**Table 5-379** Listener

| Parameter                   | Type    | Description                                                                                                                                                                                                          |
|-----------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up              | Boolean | <b>Definition:</b> Specifies the administrative status of the listener.<br><b>Default value:</b> true                                                                                                                |
| client_ca_tls_container_ref | String  | <b>Definition:</b> Specifies the ID of the CA certificate used by the listener. This parameter is available only when <b>type</b> is set to <b>client</b> .<br><b>Default value:</b> N/A                             |
| connection_limit            | Integer | <b>Definition:</b> Specifies the maximum number of connections that the listener can establish with backend servers.<br><b>Range:</b> an integer greater than or equal to -1                                         |
| created_at                  | String  | <b>Definition:</b> Specifies the time when the listener was created.<br><b>Range:</b> N/A<br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> , for example, 2021-07-30T12:03:44Z.                 |
| default_pool_id             | String  | <b>Definition:</b> Specifies the ID of the default backend server group of the listener. If there is no matched forwarding policy, requests will be routed to the default backend server group.<br><b>Range:</b> N/A |

| Parameter                 | Type                                             | Description                                                                                                                                                                                                                                                |
|---------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| default_tls_container_ref | String                                           | <b>Definition:</b> Specifies the ID of the server certificate used by the listener.<br><b>Default value:</b> N/A                                                                                                                                           |
| description               | String                                           | <b>Definition:</b> Provides supplementary information about the listener.<br><b>Range:</b> N/A                                                                                                                                                             |
| http2_enable              | Boolean                                          | <b>Definition:</b> Specifies whether to allow clients to use HTTP/2 to communicate with the load balancer for higher access performance.<br>However, the load balancer still uses HTTP/1.x to forward requests to the backend server.<br><b>Range:</b> N/A |
| id                        | String                                           | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A                                                                                                                                                                                         |
| insert_headers            | <a href="#">ListenerInsertHeaders</a> object     | <b>Definition:</b> Specifies the HTTP headers that can transmit required information to backend servers. For example, you can use the <b>X-Forwarded-ELB-IP</b> header to transmit the load balancer EIP to backend servers.                               |
| loadbalancers             | Array of <a href="#">LoadBalancerRef</a> objects | <b>Definition:</b> Specifies the ID of the load balancer that the listener is added to. A listener can be associated with only one load balancer.                                                                                                          |
| name                      | String                                           | <b>Definition:</b> Specifies the name of the listener. If you leave the listener name empty, you cannot locate it in the listener list and view its details.<br><b>Range:</b> N/A                                                                          |
| project_id                | String                                           | <b>Definition:</b> Specifies the ID of the project that the listener belongs to.<br><b>Range:</b> N/A                                                                                                                                                      |
| enterprise_project_id     | String                                           | <b>Definition:</b> Specifies the enterprise project ID.<br><b>Range:</b> N/A                                                                                                                                                                               |



| Parameter          | Type                                 | Description                                                                                                                                                                                                                                                                       |
|--------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol           | String                               | <b>Definition:</b> Specifies the protocol of the listener.<br><b>Range:</b> TCP, UDP, HTTP, HTTPS, TERMINATED_HTTPS, QUIC, IP, or TLS. IP is only available for listeners that will be added to gateway load balancers.                                                           |
| protocol_port      | Integer                              | <b>Definition:</b> Specifies the port used by the listener.<br><b>Default value:</b> N/A                                                                                                                                                                                          |
| sni_container_refs | Array of strings                     | <b>Definition:</b> Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener.<br><b>Range:</b> N/A                                                                                                                                       |
| sni_match_algo     | String                               | <b>Definition:</b> Specifies how wildcard domain name matches with the SNI certificates used by the listener.<br><b>Range:</b> <b>longest_suffix</b> indicates longest suffix match. <b>wildcard</b> indicates wildcard match.                                                    |
| tags               | Array of <a href="#">Tag</a> objects | <b>Definition:</b> Lists the tags.                                                                                                                                                                                                                                                |
| updated_at         | String                               | <b>Definition:</b> Specifies the time when the listener was updated.<br><b>Range:</b> The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> , for example, 2021-07-30T12:03:44Z.                                                                                     |
| tls_ciphers_policy | String                               | <b>Definition:</b> Specifies the security policy used by the listener.<br><b>Range:</b> tls-1-0-inherit, tls-1-0, tls-1-1, tls-1-2, tls-1-2-strict, tls-1-2-fs, tls-1-0-with-1-3, tls-1-2-fs-with-1-3, hybrid-policy-1-0, or tls-1-2-strict-no-cbc. The default value is tls-1-2. |
| security_policy_id | String                               | <b>Definition:</b> Specifies the ID of the custom security policy.<br><b>Range:</b> N/A                                                                                                                                                                                           |

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable_member_retry | Boolean | <b>Definition:</b> Specifies whether to enable health check retries for backend servers.<br><b>Range:</b> <b>true</b> indicates health check retries will be enabled. <b>false</b> indicates health check retries will be disabled.                                                                                                                                                                                                                                                                                                           |
| keepalive_timeout   | Integer | <b>Definition:</b> Specifies the idle timeout duration, in seconds. If the load balancer receives no requests within the idle timeout duration, it will disconnect the connection with the client and establish a new connection when there is a new request.<br><b>Range:</b> <ul style="list-style-type: none"><li>For TCP and IP listeners, the value ranges from 10s to 4000s. The default value is 300s.</li><li>For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0s to 4000s. The default value is 60s.</li></ul> |
| client_timeout      | Integer | <b>Definition:</b> Specifies the timeout duration for waiting for a response from a client, in seconds. There are two situations: <ul style="list-style-type: none"><li>If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted.</li><li>If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected.</li></ul> <b>Range:</b> 1-300                                    |
| member_timeout      | Integer | <b>Definition:</b> Specifies the timeout duration for waiting for a response from a backend server, in seconds. If the backend server fails to respond after the timeout duration elapses, the load balancer will stop waiting and return HTTP 504 Gateway Timeout to the client.<br><b>Range:</b> 1-300                                                                                                                                                                                                                                      |

| Parameter                    | Type                                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipgroup                      | <a href="#">ListenerIpGroup</a> object | <b>Definition:</b> Specifies the IP address group associated with the listener.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| transparent_client_ip_enable | Boolean                                | <b>Definition:</b> Specifies whether to pass source IP addresses of the clients to backend servers. If it is enabled, the source IP addresses of the clients will be passed to the backend server.<br><br>This parameter applies only to TCP/UDP listeners added to a shared load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• TCP or UDP listeners of shared load balancers: The value can be <b>true</b> or <b>false</b>, and the default value is <b>false</b> if this parameter is not passed.</li><li>• HTTP or HTTPS listeners of shared load balancers: The value can only be <b>true</b>, and the default value is <b>true</b> if this parameter is not passed.</li><li>• All listeners of dedicated load balancers: The value can only be <b>true</b>, and the default value is <b>true</b> if this parameter is not passed.</li></ul> |
| proxy_protocol_enable        | Boolean                                | <b>Definition:</b> Specifies whether to enable ProxyProtocol to pass the source IP addresses of the clients to backend servers. This parameter is available only for TLS listeners and does not take effect for other types of listeners.<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Parameter               | Type                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enhance_l7policy_enable | Boolean                                   | <p><b>Definition:</b> Specifies whether to enable advanced forwarding. If advanced forwarding is enabled, more flexible forwarding policies and rules are supported.</p> <p>The following scenarios are supported:</p> <ul style="list-style-type: none"><li>• <b>action</b> can be set to <b>REDIRECT_TO_URL</b> (requests will be redirected to another URL) or <b>Fixed_RESPONSE</b> (a fixed response body will be returned to clients).</li><li>• Parameters <b>priority</b>, <b>redirect_url_config</b>, and <b>fixed_response_config</b> can be specified in a forwarding policy.</li><li>• <b>type</b> can be set to <b>METHOD</b>, <b>HEADER</b>, <b>QUERY_STRING</b>, or <b>SOURCE_IP</b> for a forwarding rule.</li><li>• If <b>type</b> is set to <b>HOST_NAME</b> for a forwarding rule, the value of the forwarding rule supports wildcard asterisks (*).</li><li>• Parameter <b>conditions</b> can be specified for forwarding rules.</li></ul> <p><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).</p> |
| quic_config             | <a href="#">ListenerQuicConfig</a> object | <p><b>Definition:</b> Specifies the QUIC configuration for the current listener.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| protection_status       | String                                    | <p><b>Definition:</b> Specifies the protection status.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| protection_reason       | String                                    | <p><b>Definition:</b> Specifies why modification protection is enabled.</p> <p><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (&lt;&gt;).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Parameter             | Type                              | Description                                                                                                                                                                                                                                                                                                                  |
|-----------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| gzip_enable           | Boolean                           | <b>Definition:</b> Specifies whether to enable <b>gzip_enable</b> for a load balancer.<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).                                                                                                                             |
| port_ranges           | Array of <b>PortRange</b> objects | <b>Definition:</b> Specifies one or more port ranges, including the start and end ports.                                                                                                                                                                                                                                     |
| ssl_early_data_enable | Boolean                           | <b>Definition:</b> Specifies whether to enable zero round trip time resumption (0-RTT) for listeners.<br><b>Constraints:</b> This option can be configured only for HTTPS listeners and depends on the TLS 1.3 security policy protocols.                                                                                    |
| cps                   | Integer                           | <b>Definition:</b> Specifies the maximum number of new connections that a listener can handle per second. If the value is greater than the number defined in the load balancer flavors, the latter is used as the limit.<br><b>Range:</b> 0 to 1000000                                                                       |
| connection            | Integer                           | <b>Definition:</b> Specifies the maximum number of concurrent connections that a listener can handle per second. If the value is greater than the number defined in the load balancer flavors, the latter is used as the limit.<br><b>Range:</b> 0 to 1000000                                                                |
| nat64_enable          | Boolean                           | <b>Definition:</b> Specifies whether to translate between IPv4 and IPv6 addresses. This option allows a client to access IPv4 or IPv6 backend servers by accessing the IPv4 or IPv6 address of a load balancer.<br><b>Range:</b><br><b>true:</b> Enable <b>nat64_enable</b> .<br><b>false:</b> Disable <b>nat64_enable</b> . |

**Table 5-380** ListenerInsertHeaders

| Parameter                      | Type    | Description                                                                                                                                                                                                                  |
|--------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-ELB-IP             | Boolean | <b>Definition:</b> If <b>X-Forwarded-ELB-IP</b> is set to <b>true</b> , the load balancer EIP will be stored in the <b>X-Forwarded-ELB-IP</b> header and passed to backend servers.                                          |
| X-Forwarded-Port               | Boolean | <b>Definition:</b> If <b>X-Forwarded-Port</b> is set to <b>true</b> , the listening port of the load balancer will be stored in the <b>X-Forwarded-Port</b> header and passed to backend servers.                            |
| X-Forwarded-For-Port           | Boolean | <b>Definition:</b> If <b>X-Forwarded-For-Port</b> is set to <b>true</b> , the source port of the client will be stored in the HTTP header and passed to backend servers.                                                     |
| X-Forwarded-Host               | Boolean | <b>Definition:</b> If <b>X-Forwarded-Host</b> is set to <b>true</b> , the client host can be stored in the <b>X-Forwarded-Host</b> header and passed to backend servers.                                                     |
| X-Forwarded-Proto              | Boolean | <b>Definition:</b> If <b>X-Forwarded-Proto</b> is set to <b>true</b> , the listener protocol of the load balancer can be stored in the <b>X-Forwarded-Proto</b> header and passed to backend servers.                        |
| X-Real-IP                      | Boolean | <b>Definition:</b> If <b>X-Real-IP</b> is set to <b>true</b> , the client IP address can be stored in the <b>X-Real-IP</b> header and passed to backend servers.                                                             |
| X-Forwarded-ELB-ID             | Boolean | <b>Definition:</b> If <b>X-Forwarded-ELB-ID</b> is set to <b>true</b> , the load balancer ID can be stored in the <b>X-Forwarded-ELB-ID</b> header and passed to backend servers.                                            |
| X-Forwarded-TLS-Certificate-ID | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Certificate-ID</b> is set to <b>true</b> , the certificate ID of the load balancer can be stored in the <b>X-Forwarded-TLS-Certificate-ID</b> header and passed to backend servers. |
| X-Forwarded-TLS-Protocol       | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Protocol</b> is set to <b>true</b> , the algorithm protocol of the load balancer can be stored in the <b>X-Forwarded-TLS-Protocol</b> header and passed to backend servers.         |

| Parameter                      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-TLS-Cipher         | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Cipher</b> is set to <b>true</b> , the algorithm suite of the load balancer can be stored in the <b>X-Forwarded-TLS-Cipher</b> header and passed to backend servers.                                                                                                                                                                                                            |
| X-Forwarded-TLS-Protocol-alias | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-TLS-Protocol header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-TLS-Protocol</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-TLS-Cipher-alias   | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-TLS-Cipher header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-TLS-Cipher</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A     |

| Parameter                               | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-For-Processing-Mode         | String  | <p><b>Definition:</b> Specifies how the X-Forwarded-For header will be handled.</p> <ul style="list-style-type: none"><li>• <b>append:</b> The IP address of the last hop will be included in the X-Forwarded-For header and sent to the backend server.</li><li>• <b>remove:</b> The X-Forwarded-For header will be deleted before the request is sent to the backend server, regardless of whether the request carries the X-Forwarded-For header.</li><li>• <b>preserve:</b> The existing X-Forwarded-For header will be retained in the request.</li></ul> <p><b>Constraints:</b> This parameter is available only for HTTP, HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>append</b>, <b>remove</b>, or <b>preserve</b></p> <p><b>Default value:</b> <b>append</b></p> |
| X-Forwarded-Clientcert-subjectdn-enable | Boolean | <p><b>Definition:</b> Specifies whether to transfer the owner information of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-subjectdn header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                                                                                                                                                                                                                                                                                                                                                               |
| X-Forwarded-Clientcert-subjectdn-alias  | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-subjectdn header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-subjectdn-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                  |



| Parameter                                 | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-issuerdn-enable    | Boolean | <b>Definition:</b> Specifies whether to transfer the issuer information of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-issuerdn header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                  |
| X-Forwarded-Clientcert-issuerdn-alias     | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-issuerdn header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-issuerdn-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-fingerprint-enable | Boolean | <b>Definition:</b> Specifies whether to transfer the fingerprint of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-fingerprint header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                      |

| Parameter                                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-fingerprint-alias   | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-fingerprint header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-fingerprint-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>          |
| X-Forwarded-Clientcert-clientverify-enable | Boolean | <p><b>Definition:</b> Specifies whether to transfer the verification result of the client certificate that accesses the load balancer through the <b>X-Forwarded-Clientcert-clientverify</b> header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                               |
| X-Forwarded-Clientcert-clientverify-alias  | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert-clientverify</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-clientverify-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-serialnumber-enable | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate serial number through the <b>X-Forwarded-Clientcert-serialnumber</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                                                  |
| X-Forwarded-Clientcert-serialnumber-alias  | String  | <b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert-serialnumber</b> header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-serialnumber-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-enable              | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate content through the <b>X-Forwarded-Clientcert</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                                                                     |
| X-Forwarded-Clientcert-alias               | String  | <b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert</b> header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, QUIC, and TLS listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A                      |

| Parameter                             | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                 |
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| X-Forwarded-Clientcert-ciphers-enable | Boolean | <b>Definition:</b> Specifies whether to transfer the TLS cipher suite supported by the client through the <b>X-Forwarded-Clientcert-ciphers</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                              |
| X-Forwarded-Clientcert-ciphers-alias  | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-ciphers header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-ciphers-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-end-enable     | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate expiration date through the <b>X-Forwarded-Clientcert-end</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                                        |
| X-Forwarded-Clientcert-end-alias      | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-end header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-end-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, QUIC, and TLS listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A    |

| Parameter                            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Alpn-Protocol-enable | Boolean | <b>Definition:</b> Specifies whether to use the X-Forwarded-Tls-Alpn-Protocol header to transfer the application protocol that the client and the load balancer negotiate to use during SSL handshakes.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                            |
| X-Forwarded-Tls-Alpn-Protocol-alias  | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Tls-Alpn-Protocol header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Alpn-Protocol-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Tls-Sni-enable           | Boolean | <b>Definition:</b> Specifies whether to transfer the domain name of the SNI certificate accessed by the client through the <b>X-Forwarded-Tls-Sni</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                      |

| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Sni-alias  | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Tls-Sni</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Sni-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |
| X-Forwarded-Tls-Ja3-enable | Boolean | <p><b>Definition:</b> Specifies whether to transfer the Ja3 fingerprint of the client that accesses the load balancer through the <b>X-Forwarded-Tls-Ja3</b> header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                               |
| X-Forwarded-Tls-Ja3-alias  | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Tls-Ja3</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Ja3-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Ja4-enable | Boolean | <b>Definition:</b> Specifies whether to transfer the Ja4 fingerprint of the client that accesses the load balancer through the X-Forwarded-Tls-Ja4 header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                     |
| X-Forwarded-Tls-Ja4-alias  | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Tls-Ja4 header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Ja4-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |

**Table 5-381** LoadBalancerRef

| Parameter | Type   | Description                                                             |
|-----------|--------|-------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A |

**Table 5-382** Tag

| Parameter | Type   | Description                                                      |
|-----------|--------|------------------------------------------------------------------|
| key       | String | <b>Definition:</b> Specifies the tag key.<br><b>Range:</b> N/A   |
| value     | String | <b>Definition:</b> Specifies the tag value.<br><b>Range:</b> N/A |

**Table 5-383** ListenerIpGroup

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                       |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipgroup_id     | String  | <b>Definition:</b> Specifies the ID of the IP address group associated with the listener.<br><br>This parameter is mandatory during creation and is optional during update.<br><b>Constraints:</b><br>The specified IP address group must exist, and the value cannot be <b>null</b> . Otherwise, the IP address group conflicts with <b>enable_ipgroup</b> .                     |
| enable_ipgroup | Boolean | <b>Definition:</b> Specifies whether access control is enabled.<br><br>A listener with access control enabled can be directly deleted.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Access control is enabled.</li><li>• <b>false:</b> Access control is disabled.</li></ul>                                                                             |
| type           | String  | <b>Definition:</b> Specifies how access to the listener is controlled.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>white:</b> A whitelist will be configured. Only IP addresses in the whitelist can access the listener.</li><li>• <b>black:</b> A blacklist will be configured. IP addresses in the blacklist are not allowed to access the listener.</li></ul> |

**Table 5-384** ListenerQuicConfig

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                    |
|---------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| quic_listener_id    | String  | <b>Definition:</b> Specifies the ID of the QUIC listener.<br><b>Range:</b> N/A                                                                                                                                                                                                                 |
| enable_quic_upgrade | Boolean | <b>Definition:</b> Specifies whether to enable QUIC upgrade. If this option is enabled, HTTPS listeners will be upgraded to QUIC listeners.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>True:</b> Enable QUIC upgrade.</li><li>• <b>False:</b> Disable QUIC upgrade.</li></ul> |



**Table 5-385** PortRange

| Parameter  | Type    | Description                                                                                                                                                                                      |
|------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| start_port | Integer | <b>Definition:</b> Specifies the start port number.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1-65535<br><b>Default value:</b> N/A                                                             |
| end_port   | Integer | <b>Definition:</b> Specifies the end port number.<br><b>Constraints:</b> The value must be greater than or equal to the start port number.<br><b>Range:</b> 1-65535<br><b>Default value:</b> N/A |

## Example Requests

- Example 1: Adding a TCP listener

POST https://{ELB\_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/listeners

```
{
 "listener": {
 "protocol_port": 80,
 "protocol": "TCP",
 "loadbalancer_id": "098b2f68-af1c-41a9-8efd-69958722af62",
 "name": "My listener",
 "admin_state_up": true,
 "insert_headers": {
 "X-Forwarded-ELB-IP": true
 }
 }
}
```

- Example 2: Adding an HTTPS listener

POST https://{ELB\_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/listeners

```
{
 "listener": {
 "protocol_port": 90,
 "protocol": "HTTPS",
 "loadbalancer_id": "098b2f68-af1c-41a9-8efd-69958722af62",
 "name": "My listener",
 "admin_state_up": true,
 "ipgroup": {
 "ipgroup_id": "0416b6f1-877f-4a51-987e-978b3f083542",
 "type": "black"
 },
 "security_policy_id": "8722e0e0-9cc9-4490-9660-8c9a5732fbb0",
 "default_tls_container_ref": "233a325e5e3e4ce8beeb320aa714cc12"
 }
}
```

## Example Responses

**Status code: 201**

Successful request.

```
{
 "listener" : {
 "id" : "0b11747a-b139-492f-9692-2df0b1c87193",
 "name" : "My listener",
 "protocol_port" : 80,
 "protocol" : "TCP",
 "description" : null,
 "default_tls_container_ref" : null,
 "admin_state_up" : true,
 "loadbalancers" : [{
 "id" : "098b2f68-af1c-41a9-8efd-69958722af62"
 }],
 "client_ca_tls_container_ref" : null,
 "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
 "sni_container_refs" : [],
 "connection_limit" : -1,
 "member_timeout" : null,
 "client_timeout" : null,
 "keepalive_timeout" : null,
 "default_pool_id" : null,
 "ipgroup" : null,
 "tls_ciphers_policy" : "tls-1-2",
 "tags" : [],
 "created_at" : "2019-04-02T00:12:32Z",
 "updated_at" : "2019-04-02T00:12:32Z",
 "http2_enable" : false,
 "enable_member_retry" : true,
 "insert_headers" : {
 "X-Forwarded-ELB-IP" : true
 },
 "transparent_client_ip_enable" : false,
 "nat64_enable" : false
 },
 "request_id" : "f4c4aca8-df16-42e8-8836-33e4b8e9aa8e"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

- Example 1: Adding a TCP listener

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CreateListenerSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
```

```
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
CreateListenerRequest request = new CreateListenerRequest();
CreateListenerRequestBody body = new CreateListenerRequestBody();
ListenerInsertHeaders insertHeadersListener = new ListenerInsertHeaders();
insertHeadersListener.withXForwardedELBIP(true);
CreateListenerOption listenerbody = new CreateListenerOption();
listenerbody.withAdminStateUp(true)
 .withInsertHeaders(insertHeadersListener)
 .withLoadbalancerId("098b2f68-af1c-41a9-8efd-69958722af62")
 .withName("My listener")
 .withProtocol("TCP")
 .withProtocolPort(80);
body.withListener(listenerbody);
request.withBody(body);
try {
 CreateListenerResponse response = client.createListener(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

- Example 2: Adding an HTTPS listener

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CreateListenerSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
```

```
.withAk(ak)
.withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
CreateListenerRequest request = new CreateListenerRequest();
CreateListenerRequestBody body = new CreateListenerRequestBody();
CreateListenerIpGroupOption ipgroupListener = new CreateListenerIpGroupOption();
ipgroupListener.withIpgroupId("0416b6f1-877f-4a51-987e-978b3f083542")
 .withType(CreateListenerIpGroupOption.TypeEnum.fromValue("black"));
CreateListenerOption listenerbody = new CreateListenerOption();
listenerbody.withAdminStateUp(true)
 .withDefaultTlsContainerRef("233a325e5e3e4ce8beeb320aa714cc12")
 .withLoadbalancerId("098b2f68-af1c-41a9-8efd-69958722af62")
 .withName("My listener")
 .withProtocol("HTTPS")
 .withProtocolPort(90)
 .withSecurityPolicyId("8722e0e0-9cc9-4490-9660-8c9a5732fbb0")
 .withIpgroup(ipgroupListener);
body.withListener(listenerbody);
request.withBody(body);
try {
 CreateListenerResponse response = client.createListener(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrMsg());
}
}
```

- **Example 3: Adding an IP listener to a gateway load balancer**

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CreateListenerSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);
```

```
ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
CreateListenerRequest request = new CreateListenerRequest();
CreateListenerRequestBody body = new CreateListenerRequestBody();
CreateListenerIpGroupOption ipgroupListener = new CreateListenerIpGroupOption();
ipgroupListener.withIpgroupId("0416b6f1-877f-4a51-987e-978b3f083542")
 .withType(CreateListenerIpGroupOption.TypeEnum.fromValue("black"));
CreateListenerOption listenerbody = new CreateListenerOption();
listenerbody.withAdminStateUp(true)
 .withLoadbalancerId("098b2f68-af1c-41a9-8efd-69958722af62")
 .withName("My IP listener")
 .withProtocol("IP")
 .withIpgroup(ipgroupListener);
body.withListener(listenerbody);
request.withBody(body);
try {
 CreateListenerResponse response = client.createListener(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrMsg());
}
}
```

## Python

- Example 1: Adding a TCP listener

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateListenerRequest()
 insertHeadersListener = ListenerInsertHeaders(
 x_forwarded_elb_ip=True
)
```

```
listenerbody = CreateListenerOption(
 admin_state_up=True,
 insert_headers=insertHeadersListener,
 loadbalancer_id="098b2f68-af1c-41a9-8efd-69958722af62",
 name="My listener",
 protocol="TCP",
 protocol_port=80
)
request.body = CreateListenerRequestBody(
 listener=listenerbody
)
response = client.create_listener(request)
print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

- Example 2: Adding an HTTPS listener

# coding: utf-8

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateListenerRequest()
 ipgroupListener = CreateListenerIpGroupOption(
 ipgroup_id="0416b6f1-877f-4a51-987e-978b3f083542",
 type="black"
)
 listenerbody = CreateListenerOption(
 admin_state_up=True,
 default_tls_container_ref="233a325e5e3e4ce8beeb320aa714cc12",
 loadbalancer_id="098b2f68-af1c-41a9-8efd-69958722af62",
 name="My listener",
 protocol="HTTPS",
 protocol_port=90,
 security_policy_id="8722e0e0-9cc9-4490-9660-8c9a5732fbb0",
 ipgroup=ipgroupListener
)
 request.body = CreateListenerRequestBody(
 listener=listenerbody
)
 response = client.create_listener(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
```

```
print(e.error_code)
print(e.error_msg)
```

- Example 3: Adding an IP listener to a gateway load balancer

```
coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateListenerRequest()
 ipgroupListener = CreateListenerIpGroupOption(
 ipgroup_id="0416b6f1-877f-4a51-987e-978b3f083542",
 type="black"
)
 listenerbody = CreateListenerOption(
 admin_state_up=True,
 loadbalancer_id="098b2f68-af1c-41a9-8efd-69958722af62",
 name="My IP listener",
 protocol="IP",
 ipgroup=ipgroupListener
)
 request.body = CreateListenerRequestBody(
 listener=listenerbody
)
 response = client.create_listener(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

- Example 1: Adding a TCP listener

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
```

security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.

// In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD\_SDK\_AK and CLOUD\_SDK\_SK in the local environment

```
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.CreateListenerRequest{}
xForwardedELBIPInsertHeaders:= true
insertHeadersListener := &model.ListenerInsertHeaders{
 XForwardedELBIP: &xForwardedELBIPInsertHeaders,
}
adminStateUpListener:= true
nameListener:= "My listener"
protocolPortListener:= int32(80)
listenerbody := &model.CreateListenerOption{
 AdminStateUp: &adminStateUpListener,
 InsertHeaders: insertHeadersListener,
 LoadbalancerId: "098b2f68-af1c-41a9-8efd-69958722af62",
 Name: &nameListener,
 Protocol: "TCP",
 ProtocolPort: &protocolPortListener,
}
request.Body = &model.CreateListenerRequestBody{
 Listener: listenerbody,
}
response, err := client.CreateListener(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

- Example 2: Adding an HTTPS listener

package main

```
import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)
```

func main() {  
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.

// In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD\_SDK\_AK and CLOUD\_SDK\_SK in the local environment

```
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"
```



```
auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.CreateListenerRequest{}
typelPgroupp := model.GetCreateListenerIpGroupOptionTypeEnum().BLACK
ipgroupListener := &model.CreateListenerIpGroupOption{
 IpgroupId: "0416b6f1-877f-4a51-987e-978b3f083542",
 Type: &typelPgroupp,
}
adminStateUpListener:= true
defaultTlsContainerRefListener:= "233a325e5e3e4ce8beeb320aa714cc12"
nameListener:= "My listener"
protocolPortListener:= int32(90)
securityPolicyIdListener:= "8722e0e0-9cc9-4490-9660-8c9a5732fbb0"
listenerbody := &model.CreateListenerOption{
 AdminStateUp: &adminStateUpListener,
 DefaultTlsContainerRef: &defaultTlsContainerRefListener,
 LoadbalancerId: "098b2f68-af1c-41a9-8efd-69958722af62",
 Name: &nameListener,
 Protocol: "HTTPS",
 ProtocolPort: &protocolPortListener,
 SecurityPolicyId: &securityPolicyIdListener,
 Ipgroup: ipgroupListener,
}
request.Body = &model.CreateListenerRequestBody{
 Listener: listenerbody,
}
response, err := client.CreateListener(request)
if err == nil {
 fmt.Printf("%v\n", response)
} else {
 fmt.Println(err)
}
}
```

- Example 3: Adding an IP listener to a gateway load balancer

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
```

```
Build()

client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.CreateListenerRequest{}
typelpgroup:= model.GetCreateListenerIpGroupOptionTypeEnum().BLACK
ipgroupListener := &model.CreateListenerIpGroupOption{
 IpgroupId: "0416b6f1-877f-4a51-987e-978b3f083542",
 Type: &typelpgroup,
}
adminStateUpListener:= true
nameListener:= "My IP listener"
listenerbody := &model.CreateListenerOption{
 AdminStateUp: &adminStateUpListener,
 LoadbalancerId: "098b2f68-af1c-41a9-8efd-69958722af62",
 Name: &nameListener,
 Protocol: "IP",
 Ipgroup: ipgroupListener,
}
request.Body = &model.CreateListenerRequestBody{
 Listener: listenerbody,
}
response, err := client.CreateListener(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 201         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.10.2 Copying a Listener

### Function

This API is used to copy a listener from a load balancer to another in the same VPC.

Note the following when copying a listener:

- You can only copy a listener from a load balancer to another in the same VPC.
- Listeners of gateway load balancers cannot be copied, and listeners of other types of load balancers cannot be copied to gateway load balancers.
- You can only copy a listener from a load balancer to another of the same type.
- The original listener cannot have more than 1,000 backend servers and 100 forwarding policies.
- The source and destination load balancers cannot be frozen or migrated.
- If **quic\_config** of the original listener is configured, **quic\_config** of the new listener will be null.
- If a redirection is configured for the original listener, this forwarding policy will not be copied.

## Calling Method

For details, see [Calling APIs](#).

## URI

POST /v3/{project\_id}/elb/listeners/{listener\_id}/clone

**Table 5-386** Path Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id  | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| listener_id | Yes       | String | <b>Definition:</b> Specifies the ID of the listener to be copied.<br><b>Constraints:</b> N/A<br><b>Range:</b> The ID must be in UUID format and can contain up to 36 characters.<br><b>Default value:</b> N/A                                                                                              |

## Request Parameters

**Table 5-387** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-388** Request body parameters

| Parameter              | Mandatory | Type                                                 | Description                                                                                     |
|------------------------|-----------|------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| target_listener_params | Yes       | Array of <a href="#">CloneListenerOption</a> objects | <b>Definition:</b> Specifies the configurations of the new listener.<br><b>Constraints:</b> N/A |

**Table 5-389** CloneListenerOption

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                     |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name      | No        | String | <b>Definition:</b> Specifies the name of the new listener.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value contains 0 to 255 characters. If an empty string is specified, the default value is used.<br><b>Default value:</b> original listener name-copy |

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer_id | Yes       | String | <p><b>Definition:</b> Specifies the ID of the load balancer to which the new listener is copied.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• Listeners cannot be copied to gateway load balancers.</li><li>• The destination load balancer must support the protocol of the original listener. If the original listener uses HTTP or HTTPS, the destination load balancer must be an application load balancer. If the original listener uses TCP, UDP, or TLS, the destination load balancer must be a network load balancer.</li><li>• Listeners of shared load balancers can be copied to shared load balancers, and those of dedicated load balancers can be copied to dedicated load balancers.</li><li>• If IP as a Backend is enabled for the source load balancer, it must also be enabled for the destination load balancer.</li><li>• If the original listener uses TLS, the destination load balancer must support TLS listeners.</li></ul> <p><b>Range:</b> The ID must be in UUID format and can contain up to 36 characters.</p> <p><b>Default value:</b> N/A</p> |

| Parameter     | Mandatory | Type                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------|-----------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol_port | No        | Integer                           | <b>Definition:</b> Specifies the port used by the new listener.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• The port cannot be the same as that of any existing listener on the destination load balancer.</li><li>• If this parameter is set to <b>0</b>, <b>port_ranges</b> is required.</li><li>• The port of HTTP and TERMINATED_HTTPS listeners added to a shared load balancer cannot be 21.</li></ul> <b>Range:</b> 0 to 65535<br><b>Default value:</b> N/A                                                                                         |
| port_ranges   | No        | Array of <b>PortRange</b> objects | <b>Definition:</b> Specifies one or more port ranges, including the start and end port numbers. A maximum of 10 port ranges can be specified. Port ranges cannot overlap with each other.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter can be specified only when <b>protocol_port</b> is set to <b>0</b> or <b>protocol_port</b> is not specified.</li><li>• This parameter is available for TCP, UDP, and TLS listeners.</li><li>• The port cannot conflict with that of any existing listener on the destination load balancer.</li></ul> |

| Parameter  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reuse_pool | No        | Boolean | <p><b>Definition:</b> Specifies whether to reuse or copy the backend server groups and backend servers of the original listener.</p> <ul style="list-style-type: none"><li>• Reuse: The destination load balancer directly uses the backend server group of the original listener.</li><li>• Copy: New backend server groups with the same settings as those of the original listener will be created and associated with the destination load balancer.</li><li>• If this parameter is set to <b>true</b>, the backend server groups of the original listener must be associated with multiple load balancers.</li><li>• This parameter is available only for copying a listener from a dedicated load balancer to another in the same VPC.</li><li>• <b>true:</b> The backend server groups of the original listener will be used.</li><li>• <b>false:</b> New backend server groups with the same settings as those of the original listener will be created and associated with the destination load balancer.</li></ul> <p><b>Constraints:</b><br/><b>Range:</b><br/><b>Default value:</b> false</p> |

| Parameter           | Mandatory | Type                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------|-----------|----------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| subnet_mapping_list | No        | Array of <a href="#">SubnetMappingList</a> objects | <p><b>Definition:</b> Specifies the IDs of the subnets where the original and new listeners' backend servers are running.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is mandatory when you copy a listener to a load balancer in a different VPC. This parameter is not required when you copy a listener to a load balancer in the same VPC.</li><li>• If <b>ip_target_enable</b> is set to <b>true</b> (<b>false</b> by default) for the source load balancer, you cannot copy a listener to a load balancer in a different VPC. In this case, this parameter cannot be specified.</li><li>• The value of <b>subnet_cidr_id</b> must be the ID of the subnet in the VPC where the original listener's backend servers are running, and the value of <b>dst_subnet_cidr_id</b> must be the ID of the subnet in the VPC where the new listener's backend servers are running. Each pair of subnets must have a unique one-to-one mapping.</li><li>• Each pair of subnets specified by <b>subnet_cidr_id</b> and <b>dst_subnet_cidr_id</b> must exist and have the same CIDR block.</li></ul> |



**Table 5-390** PortRange

| Parameter  | Mandatory | Type    | Description                                                                                                                                                                                      |
|------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| start_port | No        | Integer | <b>Definition:</b> Specifies the start port number.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1-65535<br><b>Default value:</b> N/A                                                             |
| end_port   | No        | Integer | <b>Definition:</b> Specifies the end port number.<br><b>Constraints:</b> The value must be greater than or equal to the start port number.<br><b>Range:</b> 1-65535<br><b>Default value:</b> N/A |

**Table 5-391** SubnetMappingList

| Parameter          | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                          |
|--------------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| subnet_cidr_id     | Yes       | String | <b>Definition:</b> Specifies the ID of the subnet in the VPC where the original listener's backend servers are running.<br><b>Constraints:</b> N/A<br><b>Range:</b> The ID must be in UUID format and can contain up to 36 characters.<br><b>Default value:</b> N/A                                                                                                  |
| dst_subnet_cidr_id | Yes       | String | <b>Definition:</b> Specifies the ID of the subnet in the VPC where the new listener's backend servers are running.<br><b>Constraints:</b> The VPC subnet ID must exist and must have the same CIDR block as that defined by <b>subnet_cidr_id</b> .<br><b>Range:</b> The ID must be in UUID format and can contain up to 36 characters.<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 200**

**Table 5-392** Response body parameters

| Parameter     | Type                                               | Description                                                                                                                                                                                                                                    |
|---------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listener_list | Array of <a href="#">CloneListenerResp</a> objects | <b>Definition:</b> Specifies the information about the new listener.                                                                                                                                                                           |
| request_id    | String                                             | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-).                                                           |
| job_id        | String                                             | <b>Definition:</b> Specifies the ID of the listener copy task. You can query the task details by calling the API (GET /v3/{project_id}/elb/jobs/{job_id}).<br><b>Range:</b> The ID must be in UUID format and can contain up to 36 characters. |

**Table 5-393** CloneListenerResp

| Parameter       | Type                                          | Description                                                                                                                                               |
|-----------------|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| id              | String                                        | <b>Definition:</b> Specifies the ID of the new listener.<br><b>Range:</b> The ID must be in UUID format and can contain up to 36 characters.              |
| loadbalancer_id | String                                        | <b>Definition:</b> Specifies the ID of the destination load balancer.<br><b>Range:</b> The ID must be in UUID format and can contain up to 36 characters. |
| protocol_port   | Integer                                       | <b>Definition:</b> Specifies the port used by the new listener.<br><b>Range:</b> 1 to 65535                                                               |
| port_ranges     | Array of <a href="#">ResPortRange</a> objects | <b>Definition:</b> Specifies one or more port ranges, including the start and end ports.                                                                  |

Table 5-394 ResPortRange

| Parameter  | Type    | Description                                                              |
|------------|---------|--------------------------------------------------------------------------|
| start_port | Integer | <b>Definition:</b> Specifies the start port.<br><b>Range:</b> 1 to 65535 |
| end_port   | Integer | <b>Definition:</b> Specifies the end port.<br><b>Range:</b> 1 to 65535   |

Example Requests

Copying a listener

```
POST https://{ELB_Endpoint}/v3/{project_id}/elb/listeners/{listener_id}/clone

{
 "target_listener_params": [{
 "name": "xx-clone",
 "loadbalancer_id": "fb624475-734a-470a-85ed-bd8828bae924",
 "protocol_port": 425,
 "reuse_pool": false
 }]
}
```

Example Responses

Status code: 200

Successful request.

```
{
 "request_id": "11750ade-148f-4498-bd7a-e07190a1f5fe",
 "job_id": "aa132002-c0a8-473b-82b4-69fd2d6f87d2",
 "listener_list": [{
 "id": "81fdfab0-35c0-476e-96df-e00797076843",
 "loadbalancer_id": "fb624475-734a-470a-85ed-bd8828bae924",
 "protocol_port": 425,
 "port_ranges": null
 }]
}
```

Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

Error Codes

See [Error Codes](#).

### 5.10.3 Querying Listeners

#### Function

This API is used to query listeners.

#### Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query.
- Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

#### Calling Method

For details, see [Calling APIs](#).

#### URI

GET /v3/{project\_id}/elb/listeners

Table 5-395 Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

Table 5-396 Query Parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                   |
|-----------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| limit     | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000 |

| Parameter     | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker        | No        | String           | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                               |
| page_reverse  | No        | Boolean          | <b>Definition:</b> Specifies whether to use reverse query.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true</b>: Query resources on the previous page.</li><li>• <b>false</b>: Query resources on the next page.</li></ul> <b>Default value:</b> false |
| protocol_port | No        | Array of strings | <b>Definition:</b> Specifies the port used by the listener.<br>Multiple ports can be used for query in the format of <i>protocol_port=xxx&amp;protocol_port=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                           |

| Parameter                 | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol                  | No        | Array of strings | <b>Definition:</b> Specifies the protocol used by the listener.<br>Multiple protocols can be used for query in the format of <i>protocol=xxx&amp;protocol=xxx</i> .<br><b>Constraints:</b> N/A<br>The value can be <b>TCP, UDP, HTTP, HTTPS, TERMINATED_HTTPS, QUIC, TLS</b> , or <b>IP</b> . <b>IP</b> is only available for listeners that will be added to gateway load balancers. <b>TERMINATED_HTTPS</b> is only available for listeners that will be added to shared load balancers.<br><b>Default value:</b> N/A |
| description               | No        | Array of strings | <b>Definition:</b> Provides supplementary information about the listener.<br>Multiple descriptions can be used for query in the format of <i>description=xxx&amp;description=xx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                      |
| default_tls_container_ref | No        | Array of strings | <b>Definition:</b> Specifies the ID of the server certificate used by the listener.<br>Multiple IDs can be used for query in the format of <i>default_tls_container_ref=xxx&amp;default_tls_container_ref=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                        |

| Parameter                   | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| client_ca_tls_container_ref | No        | Array of strings | <b>Definition:</b> Specifies the ID of the CA certificate used by the listener.<br><br>Multiple IDs can be used for query in the format of <i>client_ca_tls_container_ref=xxx</i> & <i>client_ca_tls_container_ref=xx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                        |
| admin_state_up              | No        | Boolean          | <b>Definition:</b> Specifies the administrative status of the listener.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                            |
| include_recycle_bin         | No        | Boolean          | <b>Definition:</b> Specifies whether to query the listeners associated with the load balancers in the recycle bin.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Listeners associated with the load balancers in the recycle bin are returned.</li><li>• <b>false:</b> Listeners associated with the load balancers in the recycle bin are not returned.</li></ul> <b>Default value:</b> N/A |

| Parameter        | Mandatory | Type              | Description                                                                                                                                                                                                                                                                                                                                                                  |
|------------------|-----------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| connection_limit | No        | Array of integers | <b>Definition:</b> Specifies the maximum number of connections that the listener can establish with backend servers.<br><br>Multiple values can be used for query in the format of <i>connection_limit=xxx&amp;connection_limit=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                       |
| default_pool_id  | No        | Array of strings  | <b>Definition:</b> Specifies the ID of the default backend server group. If there is no matched forwarding policy, requests will be routed to the default backend server group.<br><br>Multiple IDs can be used for query in the format of <i>default_pool_id=xxx&amp;default_pool_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| id               | No        | Array of strings  | <b>Definition:</b> Specifies the listener ID.<br><br>Multiple IDs can be used for query in the format of <i>id=xxx&amp;id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                             |
| name             | No        | Array of strings  | <b>Definition:</b> Specifies the name of the listener added to the load balancer.<br><br>Multiple names can be used for query in the format of <i>name=xxx&amp;name=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                   |



| Parameter          | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| http2_enable       | No        | Boolean          | <b>Definition:</b> Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the load balancer. Request forwarding using HTTP/2 improves the access performance between your application and the load balancer. However, the load balancer still uses HTTP/1.x to forward requests to the backend server.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A |
| loadbalancer_id    | No        | Array of strings | <b>Definition:</b> Specifies the ID of the load balancer that the listener is added to.<br>Multiple IDs can be used for query in the format of <i>loadbalancer_id=xxx&amp;loadbalancer_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                            |
| tls_ciphers_policy | No        | Array of strings | <b>Definition:</b> Specifies the security policy used by the listener.<br>Multiple security policies can be used for query in the format of <i>tls_ciphers_policy=xxx&amp;tls_ciphers_policy=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                         |

| Parameter        | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                      |
|------------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_address   | No        | Array of strings | <b>Definition:</b> Specifies the IP address of the backend server. This is a query parameter and will not be included in the response.<br><br>Multiple IP addresses can be used for query in the format of <i>member_address=xxx&amp;member_address=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                       |
| member_device_id | No        | Array of strings | <b>Definition:</b> Specifies the ID of the ECS that is associated with the load balancer as a backend server. This is a query parameter and will not be included in the response.<br><br>Multiple IDs can be used for query in the format of <i>member_device_id=xxx&amp;member_device_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter             | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | Array of strings | <p><b>Definition:</b> Specifies the ID of the enterprise project.</p> <p>Multiple values can be used for query in the format of:<br/><i>enterprise_project_id=xxx&amp;enterprise_project_id=xxx.</i></p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enterprise_project_id</b> is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:listeners:list</b> permission must be assigned to the user group.</li><li>• If <b>enterprise_project_id</b> is specified, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:listeners:list</b> permission are queried.</li></ul> <p><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p> |
| enable_member_retry   | No        | Boolean          | <p><b>Definition:</b> Specifies whether to enable health check retries for backend servers.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> The value can be <b>true</b> (enable health check retries) or <b>false</b> (disable health check retries).</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Parameter      | Mandatory | Type              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------|-----------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_timeout | No        | Array of integers | <p><b>Definition:</b> Specifies the timeout duration for waiting for a response from a backend server, in seconds. If the backend server fails to respond after the timeout duration elapses, the load balancer will stop waiting and return HTTP 504 Gateway Timeout to the client.</p> <p>Multiple durations can be used for query in the format of<br/><i>member_timeout=xxx&amp;member_timeout=xxx.</i></p> <p><b>Constraints:</b> N/A<br/><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p>                                                                                                                                                                                                          |
| client_timeout | No        | Array of integers | <p><b>Definition:</b> Specifies the timeout duration for waiting for a response from a client, in seconds. There are two situations:</p> <ul style="list-style-type: none"><li>• If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted.</li><li>• If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected.</li></ul> <p>Multiple durations can be used for query in the format of<br/><i>client_timeout=xxx&amp;client_timeout=xxx.</i></p> <p><b>Constraints:</b> N/A<br/><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p> |

| Parameter                    | Mandatory | Type              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------|-----------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| keepalive_timeout            | No        | Array of integers | <b>Definition:</b> Specifies the idle timeout duration, in seconds. If the load balancer receives no requests within the idle timeout duration, it will disconnect the connection with the client and establish a new connection when there is a new request.<br>Multiple durations can be used for query in the format of <i>keepalive_timeout=xxx&amp;keepalive_timeout=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| transparent_client_ip_enable | No        | Boolean           | <b>Definition:</b> Specifies whether to pass source IP addresses of the clients to backend servers. This parameter is only available for TCP or UDP listeners of shared load balancers.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A                                                                                                        |
| proxy_protocol_enable        | No        | Boolean           | <b>Definition:</b> Specifies whether to enable the ProxyProtocol option to pass the source IP addresses of the clients to backend servers.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A                                                                                                                                                     |

| Parameter               | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enhance_l7policy_enable | No        | Boolean          | <b>Definition:</b> Specifies whether to enable advanced forwarding. If you enable this function, you can configure more flexible forwarding policies and rules.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A                                                                                                            |
| member_instance_id      | No        | Array of strings | <b>Definition:</b> Specifies the backend server ID. This is a query parameter and will not be included in the response. Multiple IDs can be used for query in the format of <i>member_instance_id=xxx&amp;member_instance_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                          |
| protection_status       | No        | Array of strings | <b>Definition:</b> Specifies the protection status. Multiple statuses can be used for query in the format of <i>protection_status=xxx&amp;protection_status=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul> <b>Default value:</b> nonProtection |

| Parameter             | Mandatory | Type    | Description                                                                                                                                                                                                                                                             |
|-----------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ssl_early_data_enable | No        | Boolean | <b>Definition:</b> Specifies whether to enable zero round trip time resumption (0-RTT) for listeners.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A |
| nat64_enable          | No        | Boolean | <b>Definition:</b> Specifies whether to set <b>nat64_enable</b> to <b>true</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A                      |

## Request Parameters

**Table 5-397** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-398** Response body parameters

| Parameter  | Type   | Description                                                                                                                                                                          |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

| Parameter | Type                                      | Description                                              |
|-----------|-------------------------------------------|----------------------------------------------------------|
| page_info | <a href="#">PageInfo</a> object           | <b>Definition:</b> Specifies the pagination information. |
| listeners | Array of <a href="#">Listener</a> objects | <b>Definition:</b> Lists the listeners.                  |

**Table 5-399** PageInfo

| Parameter       | Type    | Description                                                                                                                                                                                                                          |
|-----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String  | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |
| next_marker     | String  | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A                                                                  |
| current_count   | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A                                                                                                                                |

**Table 5-400** Listener

| Parameter                   | Type    | Description                                                                                                                                                                              |
|-----------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up              | Boolean | <b>Definition:</b> Specifies the administrative status of the listener.<br><b>Default value:</b> true                                                                                    |
| client_ca_tls_container_ref | String  | <b>Definition:</b> Specifies the ID of the CA certificate used by the listener. This parameter is available only when <b>type</b> is set to <b>client</b> .<br><b>Default value:</b> N/A |
| connection_limit            | Integer | <b>Definition:</b> Specifies the maximum number of connections that the listener can establish with backend servers.<br><b>Range:</b> an integer greater than or equal to -1             |



| Parameter                 | Type                                             | Description                                                                                                                                                                                                                                                |
|---------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| created_at                | String                                           | <b>Definition:</b> Specifies the time when the listener was created.<br><b>Range:</b> N/A<br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> , for example, 2021-07-30T12:03:44Z.                                                       |
| default_pool_id           | String                                           | <b>Definition:</b> Specifies the ID of the default backend server group of the listener. If there is no matched forwarding policy, requests will be routed to the default backend server group.<br><b>Range:</b> N/A                                       |
| default_tls_container_ref | String                                           | <b>Definition:</b> Specifies the ID of the server certificate used by the listener.<br><b>Default value:</b> N/A                                                                                                                                           |
| description               | String                                           | <b>Definition:</b> Provides supplementary information about the listener.<br><b>Range:</b> N/A                                                                                                                                                             |
| http2_enable              | Boolean                                          | <b>Definition:</b> Specifies whether to allow clients to use HTTP/2 to communicate with the load balancer for higher access performance.<br>However, the load balancer still uses HTTP/1.x to forward requests to the backend server.<br><b>Range:</b> N/A |
| id                        | String                                           | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A                                                                                                                                                                                         |
| insert_headers            | <a href="#">ListenerInsertHeaders</a> object     | <b>Definition:</b> Specifies the HTTP headers that can transmit required information to backend servers. For example, you can use the <b>X-Forwarded-ELB-IP</b> header to transmit the load balancer EIP to backend servers.                               |
| loadbalancers             | Array of <a href="#">LoadBalancerRef</a> objects | <b>Definition:</b> Specifies the ID of the load balancer that the listener is added to. A listener can be associated with only one load balancer.                                                                                                          |

| Parameter             | Type                        | Description                                                                                                                                                                                                                    |
|-----------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name                  | String                      | <b>Definition:</b> Specifies the name of the listener. If you leave the listener name empty, you cannot locate it in the listener list and view its details.<br><b>Range:</b> N/A                                              |
| project_id            | String                      | <b>Definition:</b> Specifies the ID of the project that the listener belongs to.<br><b>Range:</b> N/A                                                                                                                          |
| enterprise_project_id | String                      | <b>Definition:</b> Specifies the enterprise project ID.<br><b>Range:</b> N/A                                                                                                                                                   |
| protocol              | String                      | <b>Definition:</b> Specifies the protocol of the listener.<br><b>Range:</b> TCP, UDP, HTTP, HTTPS, TERMINATED_HTTPS, QUIC, IP, or TLS. IP is only available for listeners that will be added to gateway load balancers.        |
| protocol_port         | Integer                     | <b>Definition:</b> Specifies the port used by the listener.<br><b>Default value:</b> N/A                                                                                                                                       |
| sni_container_refs    | Array of strings            | <b>Definition:</b> Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener.<br><b>Range:</b> N/A                                                                                    |
| sni_match_algo        | String                      | <b>Definition:</b> Specifies how wildcard domain name matches with the SNI certificates used by the listener.<br><b>Range:</b> <b>longest_suffix</b> indicates longest suffix match. <b>wildcard</b> indicates wildcard match. |
| tags                  | Array of <b>Tag</b> objects | <b>Definition:</b> Lists the tags.                                                                                                                                                                                             |
| updated_at            | String                      | <b>Definition:</b> Specifies the time when the listener was updated.<br><b>Range:</b> The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> , for example, 2021-07-30T12:03:44Z.                                  |

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls_ciphers_policy  | String  | <b>Definition:</b> Specifies the security policy used by the listener.<br><b>Range:</b> tls-1-0-inherit, tls-1-0, tls-1-1, tls-1-2, tls-1-2-strict, tls-1-2-fs, tls-1-0-with-1-3, tls-1-2-fs-with-1-3, hybrid-policy-1-0, or tls-1-2-strict-no-cbc. The default value is tls-1-2.                                                                                                                                                                                                                                                                 |
| security_policy_id  | String  | <b>Definition:</b> Specifies the ID of the custom security policy.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| enable_member_retry | Boolean | <b>Definition:</b> Specifies whether to enable health check retries for backend servers.<br><b>Range:</b> <b>true</b> indicates health check retries will be enabled. <b>false</b> indicates health check retries will be disabled.                                                                                                                                                                                                                                                                                                               |
| keepalive_timeout   | Integer | <b>Definition:</b> Specifies the idle timeout duration, in seconds. If the load balancer receives no requests within the idle timeout duration, it will disconnect the connection with the client and establish a new connection when there is a new request.<br><b>Range:</b> <ul style="list-style-type: none"><li>• For TCP and IP listeners, the value ranges from 10s to 4000s. The default value is 300s.</li><li>• For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0s to 4000s. The default value is 60s.</li></ul> |
| client_timeout      | Integer | <b>Definition:</b> Specifies the timeout duration for waiting for a response from a client, in seconds. There are two situations: <ul style="list-style-type: none"><li>• If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted.</li><li>• If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected.</li></ul> <b>Range:</b> 1-300                                    |

| Parameter                    | Type                                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_timeout               | Integer                                | <b>Definition:</b> Specifies the timeout duration for waiting for a response from a backend server, in seconds. If the backend server fails to respond after the timeout duration elapses, the load balancer will stop waiting and return HTTP 504 Gateway Timeout to the client.<br><b>Range:</b> 1-300                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| ipgroup                      | <a href="#">ListenerIpGroup</a> object | <b>Definition:</b> Specifies the IP address group associated with the listener.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| transparent_client_ip_enable | Boolean                                | <b>Definition:</b> Specifies whether to pass source IP addresses of the clients to backend servers. If it is enabled, the source IP addresses of the clients will be passed to the backend server.<br>This parameter applies only to TCP/UDP listeners added to a shared load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• TCP or UDP listeners of shared load balancers: The value can be <b>true</b> or <b>false</b>, and the default value is <b>false</b> if this parameter is not passed.</li><li>• HTTP or HTTPS listeners of shared load balancers: The value can only be <b>true</b>, and the default value is <b>true</b> if this parameter is not passed.</li><li>• All listeners of dedicated load balancers: The value can only be <b>true</b>, and the default value is <b>true</b> if this parameter is not passed.</li></ul> |
| proxy_protocol_enable        | Boolean                                | <b>Definition:</b> Specifies whether to enable ProxyProtocol to pass the source IP addresses of the clients to backend servers. This parameter is available only for TLS listeners and does not take effect for other types of listeners.<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Parameter               | Type                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enhance_l7policy_enable | Boolean                                   | <p><b>Definition:</b> Specifies whether to enable advanced forwarding. If advanced forwarding is enabled, more flexible forwarding policies and rules are supported.</p> <p>The following scenarios are supported:</p> <ul style="list-style-type: none"><li>• <b>action</b> can be set to <b>REDIRECT_TO_URL</b> (requests will be redirected to another URL) or <b>Fixed_RESPONSE</b> (a fixed response body will be returned to clients).</li><li>• Parameters <b>priority</b>, <b>redirect_url_config</b>, and <b>fixed_response_config</b> can be specified in a forwarding policy.</li><li>• <b>type</b> can be set to <b>METHOD</b>, <b>HEADER</b>, <b>QUERY_STRING</b>, or <b>SOURCE_IP</b> for a forwarding rule.</li><li>• If <b>type</b> is set to <b>HOST_NAME</b> for a forwarding rule, the value of the forwarding rule supports wildcard asterisks (*).</li><li>• Parameter <b>conditions</b> can be specified for forwarding rules.</li></ul> <p><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).</p> |
| quic_config             | <a href="#">ListenerQuicConfig</a> object | <p><b>Definition:</b> Specifies the QUIC configuration for the current listener.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| protection_status       | String                                    | <p><b>Definition:</b> Specifies the protection status.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| protection_reason       | String                                    | <p><b>Definition:</b> Specifies why modification protection is enabled.</p> <p><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (&lt;&gt;).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Parameter             | Type                              | Description                                                                                                                                                                                                                                                                                                                  |
|-----------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| gzip_enable           | Boolean                           | <b>Definition:</b> Specifies whether to enable <b>gzip_enable</b> for a load balancer.<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).                                                                                                                             |
| port_ranges           | Array of <b>PortRange</b> objects | <b>Definition:</b> Specifies one or more port ranges, including the start and end ports.                                                                                                                                                                                                                                     |
| ssl_early_data_enable | Boolean                           | <b>Definition:</b> Specifies whether to enable zero round trip time resumption (0-RTT) for listeners.<br><b>Constraints:</b> This option can be configured only for HTTPS listeners and depends on the TLS 1.3 security policy protocols.                                                                                    |
| cps                   | Integer                           | <b>Definition:</b> Specifies the maximum number of new connections that a listener can handle per second. If the value is greater than the number defined in the load balancer flavors, the latter is used as the limit.<br><b>Range:</b> 0 to 1000000                                                                       |
| connection            | Integer                           | <b>Definition:</b> Specifies the maximum number of concurrent connections that a listener can handle per second. If the value is greater than the number defined in the load balancer flavors, the latter is used as the limit.<br><b>Range:</b> 0 to 1000000                                                                |
| nat64_enable          | Boolean                           | <b>Definition:</b> Specifies whether to translate between IPv4 and IPv6 addresses. This option allows a client to access IPv4 or IPv6 backend servers by accessing the IPv4 or IPv6 address of a load balancer.<br><b>Range:</b><br><b>true:</b> Enable <b>nat64_enable</b> .<br><b>false:</b> Disable <b>nat64_enable</b> . |

**Table 5-401** ListenerInsertHeaders

| Parameter                      | Type    | Description                                                                                                                                                                                                                  |
|--------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-ELB-IP             | Boolean | <b>Definition:</b> If <b>X-Forwarded-ELB-IP</b> is set to <b>true</b> , the load balancer EIP will be stored in the <b>X-Forwarded-ELB-IP</b> header and passed to backend servers.                                          |
| X-Forwarded-Port               | Boolean | <b>Definition:</b> If <b>X-Forwarded-Port</b> is set to <b>true</b> , the listening port of the load balancer will be stored in the <b>X-Forwarded-Port</b> header and passed to backend servers.                            |
| X-Forwarded-For-Port           | Boolean | <b>Definition:</b> If <b>X-Forwarded-For-Port</b> is set to <b>true</b> , the source port of the client will be stored in the HTTP header and passed to backend servers.                                                     |
| X-Forwarded-Host               | Boolean | <b>Definition:</b> If <b>X-Forwarded-Host</b> is set to <b>true</b> , the client host can be stored in the <b>X-Forwarded-Host</b> header and passed to backend servers.                                                     |
| X-Forwarded-Proto              | Boolean | <b>Definition:</b> If <b>X-Forwarded-Proto</b> is set to <b>true</b> , the listener protocol of the load balancer can be stored in the <b>X-Forwarded-Proto</b> header and passed to backend servers.                        |
| X-Real-IP                      | Boolean | <b>Definition:</b> If <b>X-Real-IP</b> is set to <b>true</b> , the client IP address can be stored in the <b>X-Real-IP</b> header and passed to backend servers.                                                             |
| X-Forwarded-ELB-ID             | Boolean | <b>Definition:</b> If <b>X-Forwarded-ELB-ID</b> is set to <b>true</b> , the load balancer ID can be stored in the <b>X-Forwarded-ELB-ID</b> header and passed to backend servers.                                            |
| X-Forwarded-TLS-Certificate-ID | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Certificate-ID</b> is set to <b>true</b> , the certificate ID of the load balancer can be stored in the <b>X-Forwarded-TLS-Certificate-ID</b> header and passed to backend servers. |
| X-Forwarded-TLS-Protocol       | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Protocol</b> is set to <b>true</b> , the algorithm protocol of the load balancer can be stored in the <b>X-Forwarded-TLS-Protocol</b> header and passed to backend servers.         |

| Parameter                      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-TLS-Cipher         | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Cipher</b> is set to <b>true</b> , the algorithm suite of the load balancer can be stored in the <b>X-Forwarded-TLS-Cipher</b> header and passed to backend servers.                                                                                                                                                                                                            |
| X-Forwarded-TLS-Protocol-alias | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-TLS-Protocol header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-TLS-Protocol</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-TLS-Cipher-alias   | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-TLS-Cipher header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-TLS-Cipher</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A     |



| Parameter                               | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-For-Processing-Mode         | String  | <p><b>Definition:</b> Specifies how the X-Forwarded-For header will be handled.</p> <ul style="list-style-type: none"><li>• <b>append:</b> The IP address of the last hop will be included in the X-Forwarded-For header and sent to the backend server.</li><li>• <b>remove:</b> The X-Forwarded-For header will be deleted before the request is sent to the backend server, regardless of whether the request carries the X-Forwarded-For header.</li><li>• <b>preserve:</b> The existing X-Forwarded-For header will be retained in the request.</li></ul> <p><b>Constraints:</b> This parameter is available only for HTTP, HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>append</b>, <b>remove</b>, or <b>preserve</b></p> <p><b>Default value:</b> <b>append</b></p> |
| X-Forwarded-Clientcert-subjectdn-enable | Boolean | <p><b>Definition:</b> Specifies whether to transfer the owner information of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-subjectdn header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                                                                                                                                                                                                                                                                                                                                                               |
| X-Forwarded-Clientcert-subjectdn-alias  | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-subjectdn header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-subjectdn-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                  |

| Parameter                                 | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-issuerdn-enable    | Boolean | <b>Definition:</b> Specifies whether to transfer the issuer information of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-issuerdn header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                  |
| X-Forwarded-Clientcert-issuerdn-alias     | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-issuerdn header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-issuerdn-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-fingerprint-enable | Boolean | <b>Definition:</b> Specifies whether to transfer the fingerprint of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-fingerprint header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                      |

| Parameter                                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-fingerprint-alias   | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-fingerprint header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-fingerprint-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>          |
| X-Forwarded-Clientcert-clientverify-enable | Boolean | <p><b>Definition:</b> Specifies whether to transfer the verification result of the client certificate that accesses the load balancer through the <b>X-Forwarded-Clientcert-clientverify</b> header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                               |
| X-Forwarded-Clientcert-clientverify-alias  | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert-clientverify</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-clientverify-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-serialnumber-enable | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate serial number through the <b>X-Forwarded-Clientcert-serialnumber</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                                                  |
| X-Forwarded-Clientcert-serialnumber-alias  | String  | <b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert-serialnumber</b> header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-serialnumber-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-enable              | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate content through the <b>X-Forwarded-Clientcert</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                                                                     |
| X-Forwarded-Clientcert-alias               | String  | <b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert</b> header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, QUIC, and TLS listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A                      |

| Parameter                             | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-ciphers-enable | Boolean | <b>Definition:</b> Specifies whether to transfer the TLS cipher suite supported by the client through the <b>X-Forwarded-Clientcert-ciphers</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                              |
| X-Forwarded-Clientcert-ciphers-alias  | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-ciphers header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-ciphers-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-end-enable     | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate expiration date through the <b>X-Forwarded-Clientcert-end</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                                        |
| X-Forwarded-Clientcert-end-alias      | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-end header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-end-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, QUIC, and TLS listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A    |

| Parameter                            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Alpn-Protocol-enable | Boolean | <b>Definition:</b> Specifies whether to use the X-Forwarded-Tls-Alpn-Protocol header to transfer the application protocol that the client and the load balancer negotiate to use during SSL handshakes.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                            |
| X-Forwarded-Tls-Alpn-Protocol-alias  | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Tls-Alpn-Protocol header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Alpn-Protocol-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Tls-Sni-enable           | Boolean | <b>Definition:</b> Specifies whether to transfer the domain name of the SNI certificate accessed by the client through the <b>X-Forwarded-Tls-Sni</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                      |

| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Sni-alias  | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Tls-Sni</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Sni-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |
| X-Forwarded-Tls-Ja3-enable | Boolean | <p><b>Definition:</b> Specifies whether to transfer the Ja3 fingerprint of the client that accesses the load balancer through the <b>X-Forwarded-Tls-Ja3</b> header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                               |
| X-Forwarded-Tls-Ja3-alias  | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Tls-Ja3</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Ja3-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Ja4-enable | Boolean | <b>Definition:</b> Specifies whether to transfer the Ja4 fingerprint of the client that accesses the load balancer through the X-Forwarded-Tls-Ja4 header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                     |
| X-Forwarded-Tls-Ja4-alias  | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Tls-Ja4 header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Ja4-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |

**Table 5-402** LoadBalancerRef

| Parameter | Type   | Description                                                             |
|-----------|--------|-------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A |

**Table 5-403** Tag

| Parameter | Type   | Description                                                      |
|-----------|--------|------------------------------------------------------------------|
| key       | String | <b>Definition:</b> Specifies the tag key.<br><b>Range:</b> N/A   |
| value     | String | <b>Definition:</b> Specifies the tag value.<br><b>Range:</b> N/A |



**Table 5-404** ListenerIpGroup

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                       |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipgroup_id     | String  | <b>Definition:</b> Specifies the ID of the IP address group associated with the listener.<br><br>This parameter is mandatory during creation and is optional during update.<br><b>Constraints:</b><br>The specified IP address group must exist, and the value cannot be <b>null</b> . Otherwise, the IP address group conflicts with <b>enable_ipgroup</b> .                     |
| enable_ipgroup | Boolean | <b>Definition:</b> Specifies whether access control is enabled.<br><br>A listener with access control enabled can be directly deleted.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Access control is enabled.</li><li>• <b>false:</b> Access control is disabled.</li></ul>                                                                             |
| type           | String  | <b>Definition:</b> Specifies how access to the listener is controlled.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>white:</b> A whitelist will be configured. Only IP addresses in the whitelist can access the listener.</li><li>• <b>black:</b> A blacklist will be configured. IP addresses in the blacklist are not allowed to access the listener.</li></ul> |

**Table 5-405** ListenerQuicConfig

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                    |
|---------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| quic_listener_id    | String  | <b>Definition:</b> Specifies the ID of the QUIC listener.<br><b>Range:</b> N/A                                                                                                                                                                                                                 |
| enable_quic_upgrade | Boolean | <b>Definition:</b> Specifies whether to enable QUIC upgrade. If this option is enabled, HTTPS listeners will be upgraded to QUIC listeners.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>True:</b> Enable QUIC upgrade.</li><li>• <b>False:</b> Disable QUIC upgrade.</li></ul> |

**Table 5-406** PortRange

| Parameter  | Type    | Description                                                                                                                                                                                      |
|------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| start_port | Integer | <b>Definition:</b> Specifies the start port number.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1-65535<br><b>Default value:</b> N/A                                                             |
| end_port   | Integer | <b>Definition:</b> Specifies the end port number.<br><b>Constraints:</b> The value must be greater than or equal to the start port number.<br><b>Range:</b> 1-65535<br><b>Default value:</b> N/A |

## Example Requests

Querying the listeners on each page

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/listeners?
limit=2&marker=0r31747a-b139-492f-2749-2df0b1c87193
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "listeners": [{
 "id": "0b11747a-b139-492f-9692-2df0b1c87193",
 "name": "My listener",
 "protocol_port": 80,
 "protocol": "TCP",
 "ipgroup": null,
 "description": "My listener update.",
 "default_tls_container_ref": null,
 "admin_state_up": true,
 "loadbalancers": [{
 "id": "098b2f68-af1c-41a9-8efd-69958722af62"
 }],
 "member_timeout": null,
 "client_timeout": null,
 "keepalive_timeout": 300,
 "client_ca_tls_container_ref": null,
 "project_id": "99a3fff0d03c428eac3678da6a7d0f24",
 "sni_container_refs": [],
 "connection_limit": -1,
 "default_pool_id": null,
 "tls_ciphers_policy": "tls-1-2",
 "tags": [],
 "created_at": "2019-04-02T00:12:32Z",
 "updated_at": "2019-04-02T17:43:46Z",
 "http2_enable": true,
 "insert_headers": {
```

```
"X-Forwarded-ELB-IP" : true
},
"transparent_client_ip_enable" : false,
"quic_config" : null,
"nat64_enable" : false
}, {
 "id" : "0b455839-3ea7-4bac-ad26-35bf22f96ea4",
 "name" : "listener-test",
 "protocol_port" : 86,
 "protocol" : "TERMINATED_HTTPS",
 "description" : null,
 "default_tls_container_ref" : "ad9b123e858d4652b80e89b9941e49a4",
 "admin_state_up" : true,
 "loadbalancers" : [{
 "id" : "309a0f61-0b62-45f2-97d1-742f3434338e"
 }],
 "member_timeout" : 60,
 "client_timeout" : 60,
 "keepalive_timeout" : 15,
 "client_ca_tls_container_ref" : "7875ccb4c6b44cdb90ab2ab89892ab71",
 "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
 "sn_i_container_refs" : ["7f41c96223d34ebaa3c8e836b6625ec0"],
 "connection_limit" : -1,
 "default_pool_id" : "5e7e0175-d5d5-4f37-bfba-88a9524ad20b",
 "tls_ciphers_policy" : "tls-1-2",
 "tags" : [],
 "created_at" : "2019-03-22T23:37:14Z",
 "updated_at" : "2019-03-22T23:37:14Z",
 "http2_enable" : false,
 "ipgroup" : null,
 "insert_headers" : {
 "X-Forwarded-ELB-IP" : true
 },
 "transparent_client_ip_enable" : false,
 "quic_config" : null,
 "nat64_enable" : false
}],
"page_info" : {
 "next_marker" : "0b455839-3ea7-4bac-ad26-35bf22f96ea4",
 "previous_marker" : "0b11747a-b139-492f-9692-2df0b1c87193",
 "current_count" : 2
},
"request_id" : "774640ee-6863-4de3-8156-aff16f51a087"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListListenersSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
```

```
environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before running
this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
ListListenersRequest request = new ListListenersRequest();
try {
 ListListenersResponse response = client.listListeners(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.getenv("CLOUD_SDK_AK")
 sk = os.getenv("CLOUD_SDK_SK")
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ListListenersRequest()
 response = client.list_listeners(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
```

```
print(e.error_code)
print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ListListenersRequest{}
 response, err := client.ListListeners(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.10.4 Viewing the Details of a Listener

### Function

This API is used to view the details of a listener.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/listeners/{listener\_id}

**Table 5-407** Path Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id  | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| listener_id | Yes       | String | <b>Definition:</b> Specifies the listener ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                 |

### Request Parameters

**Table 5-408** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

Status code: 200

**Table 5-409** Response body parameters

| Parameter  | Type                   | Description                                                                                                                                                                          |
|------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                 | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| listener   | <b>Listener</b> object | <b>Definition:</b> Specifies the listener.                                                                                                                                           |

**Table 5-410** Listener

| Parameter                   | Type    | Description                                                                                                                                                                                                          |
|-----------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up              | Boolean | <b>Definition:</b> Specifies the administrative status of the listener.<br><b>Default value:</b> true                                                                                                                |
| client_ca_tls_container_ref | String  | <b>Definition:</b> Specifies the ID of the CA certificate used by the listener. This parameter is available only when <b>type</b> is set to <b>client</b> .<br><b>Default value:</b> N/A                             |
| connection_limit            | Integer | <b>Definition:</b> Specifies the maximum number of connections that the listener can establish with backend servers.<br><b>Range:</b> an integer greater than or equal to -1                                         |
| created_at                  | String  | <b>Definition:</b> Specifies the time when the listener was created.<br><b>Range:</b> N/A<br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> , for example, 2021-07-30T12:03:44Z.                 |
| default_pool_id             | String  | <b>Definition:</b> Specifies the ID of the default backend server group of the listener. If there is no matched forwarding policy, requests will be routed to the default backend server group.<br><b>Range:</b> N/A |

| Parameter                 | Type                                             | Description                                                                                                                                                                                                                                                |
|---------------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| default_tls_container_ref | String                                           | <b>Definition:</b> Specifies the ID of the server certificate used by the listener.<br><b>Default value:</b> N/A                                                                                                                                           |
| description               | String                                           | <b>Definition:</b> Provides supplementary information about the listener.<br><b>Range:</b> N/A                                                                                                                                                             |
| http2_enable              | Boolean                                          | <b>Definition:</b> Specifies whether to allow clients to use HTTP/2 to communicate with the load balancer for higher access performance.<br>However, the load balancer still uses HTTP/1.x to forward requests to the backend server.<br><b>Range:</b> N/A |
| id                        | String                                           | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A                                                                                                                                                                                         |
| insert_headers            | <a href="#">ListenerInsertHeaders</a> object     | <b>Definition:</b> Specifies the HTTP headers that can transmit required information to backend servers. For example, you can use the <b>X-Forwarded-ELB-IP</b> header to transmit the load balancer EIP to backend servers.                               |
| loadbalancers             | Array of <a href="#">LoadBalancerRef</a> objects | <b>Definition:</b> Specifies the ID of the load balancer that the listener is added to. A listener can be associated with only one load balancer.                                                                                                          |
| name                      | String                                           | <b>Definition:</b> Specifies the name of the listener. If you leave the listener name empty, you cannot locate it in the listener list and view its details.<br><b>Range:</b> N/A                                                                          |
| project_id                | String                                           | <b>Definition:</b> Specifies the ID of the project that the listener belongs to.<br><b>Range:</b> N/A                                                                                                                                                      |
| enterprise_project_id     | String                                           | <b>Definition:</b> Specifies the enterprise project ID.<br><b>Range:</b> N/A                                                                                                                                                                               |



| Parameter          | Type                                 | Description                                                                                                                                                                                                                                                                       |
|--------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol           | String                               | <b>Definition:</b> Specifies the protocol of the listener.<br><b>Range:</b> TCP, UDP, HTTP, HTTPS, TERMINATED_HTTPS, QUIC, IP, or TLS. IP is only available for listeners that will be added to gateway load balancers.                                                           |
| protocol_port      | Integer                              | <b>Definition:</b> Specifies the port used by the listener.<br><b>Default value:</b> N/A                                                                                                                                                                                          |
| sni_container_refs | Array of strings                     | <b>Definition:</b> Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener.<br><b>Range:</b> N/A                                                                                                                                       |
| sni_match_algo     | String                               | <b>Definition:</b> Specifies how wildcard domain name matches with the SNI certificates used by the listener.<br><b>Range:</b> <b>longest_suffix</b> indicates longest suffix match. <b>wildcard</b> indicates wildcard match.                                                    |
| tags               | Array of <a href="#">Tag</a> objects | <b>Definition:</b> Lists the tags.                                                                                                                                                                                                                                                |
| updated_at         | String                               | <b>Definition:</b> Specifies the time when the listener was updated.<br><b>Range:</b> The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> , for example, 2021-07-30T12:03:44Z.                                                                                     |
| tls_ciphers_policy | String                               | <b>Definition:</b> Specifies the security policy used by the listener.<br><b>Range:</b> tls-1-0-inherit, tls-1-0, tls-1-1, tls-1-2, tls-1-2-strict, tls-1-2-fs, tls-1-0-with-1-3, tls-1-2-fs-with-1-3, hybrid-policy-1-0, or tls-1-2-strict-no-cbc. The default value is tls-1-2. |
| security_policy_id | String                               | <b>Definition:</b> Specifies the ID of the custom security policy.<br><b>Range:</b> N/A                                                                                                                                                                                           |

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable_member_retry | Boolean | <b>Definition:</b> Specifies whether to enable health check retries for backend servers.<br><b>Range:</b> <b>true</b> indicates health check retries will be enabled. <b>false</b> indicates health check retries will be disabled.                                                                                                                                                                                                                                                                                                               |
| keepalive_timeout   | Integer | <b>Definition:</b> Specifies the idle timeout duration, in seconds. If the load balancer receives no requests within the idle timeout duration, it will disconnect the connection with the client and establish a new connection when there is a new request.<br><b>Range:</b> <ul style="list-style-type: none"><li>• For TCP and IP listeners, the value ranges from 10s to 4000s. The default value is 300s.</li><li>• For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0s to 4000s. The default value is 60s.</li></ul> |
| client_timeout      | Integer | <b>Definition:</b> Specifies the timeout duration for waiting for a response from a client, in seconds. There are two situations: <ul style="list-style-type: none"><li>• If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted.</li><li>• If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected.</li></ul> <b>Range:</b> 1-300                                    |
| member_timeout      | Integer | <b>Definition:</b> Specifies the timeout duration for waiting for a response from a backend server, in seconds. If the backend server fails to respond after the timeout duration elapses, the load balancer will stop waiting and return HTTP 504 Gateway Timeout to the client.<br><b>Range:</b> 1-300                                                                                                                                                                                                                                          |

| Parameter                    | Type                                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipgroup                      | <a href="#">ListenerIpGroup</a> object | <b>Definition:</b> Specifies the IP address group associated with the listener.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| transparent_client_ip_enable | Boolean                                | <b>Definition:</b> Specifies whether to pass source IP addresses of the clients to backend servers. If it is enabled, the source IP addresses of the clients will be passed to the backend server.<br><br>This parameter applies only to TCP/UDP listeners added to a shared load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• TCP or UDP listeners of shared load balancers: The value can be <b>true</b> or <b>false</b>, and the default value is <b>false</b> if this parameter is not passed.</li><li>• HTTP or HTTPS listeners of shared load balancers: The value can only be <b>true</b>, and the default value is <b>true</b> if this parameter is not passed.</li><li>• All listeners of dedicated load balancers: The value can only be <b>true</b>, and the default value is <b>true</b> if this parameter is not passed.</li></ul> |
| proxy_protocol_enable        | Boolean                                | <b>Definition:</b> Specifies whether to enable ProxyProtocol to pass the source IP addresses of the clients to backend servers. This parameter is available only for TLS listeners and does not take effect for other types of listeners.<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Parameter               | Type                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enhance_l7policy_enable | Boolean                                   | <p><b>Definition:</b> Specifies whether to enable advanced forwarding. If advanced forwarding is enabled, more flexible forwarding policies and rules are supported.</p> <p>The following scenarios are supported:</p> <ul style="list-style-type: none"><li>• <b>action</b> can be set to <b>REDIRECT_TO_URL</b> (requests will be redirected to another URL) or <b>Fixed_RESPONSE</b> (a fixed response body will be returned to clients).</li><li>• Parameters <b>priority</b>, <b>redirect_url_config</b>, and <b>fixed_response_config</b> can be specified in a forwarding policy.</li><li>• <b>type</b> can be set to <b>METHOD</b>, <b>HEADER</b>, <b>QUERY_STRING</b>, or <b>SOURCE_IP</b> for a forwarding rule.</li><li>• If <b>type</b> is set to <b>HOST_NAME</b> for a forwarding rule, the value of the forwarding rule supports wildcard asterisks (*).</li><li>• Parameter <b>conditions</b> can be specified for forwarding rules.</li></ul> <p><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).</p> |
| quic_config             | <a href="#">ListenerQuicConfig</a> object | <p><b>Definition:</b> Specifies the QUIC configuration for the current listener.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| protection_status       | String                                    | <p><b>Definition:</b> Specifies the protection status.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| protection_reason       | String                                    | <p><b>Definition:</b> Specifies why modification protection is enabled.</p> <p><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (&lt;&gt;).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Parameter             | Type                              | Description                                                                                                                                                                                                                                                                                                                  |
|-----------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| gzip_enable           | Boolean                           | <b>Definition:</b> Specifies whether to enable <b>gzip_enable</b> for a load balancer.<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).                                                                                                                             |
| port_ranges           | Array of <b>PortRange</b> objects | <b>Definition:</b> Specifies one or more port ranges, including the start and end ports.                                                                                                                                                                                                                                     |
| ssl_early_data_enable | Boolean                           | <b>Definition:</b> Specifies whether to enable zero round trip time resumption (0-RTT) for listeners.<br><b>Constraints:</b> This option can be configured only for HTTPS listeners and depends on the TLS 1.3 security policy protocols.                                                                                    |
| cps                   | Integer                           | <b>Definition:</b> Specifies the maximum number of new connections that a listener can handle per second. If the value is greater than the number defined in the load balancer flavors, the latter is used as the limit.<br><b>Range:</b> 0 to 1000000                                                                       |
| connection            | Integer                           | <b>Definition:</b> Specifies the maximum number of concurrent connections that a listener can handle per second. If the value is greater than the number defined in the load balancer flavors, the latter is used as the limit.<br><b>Range:</b> 0 to 1000000                                                                |
| nat64_enable          | Boolean                           | <b>Definition:</b> Specifies whether to translate between IPv4 and IPv6 addresses. This option allows a client to access IPv4 or IPv6 backend servers by accessing the IPv4 or IPv6 address of a load balancer.<br><b>Range:</b><br><b>true:</b> Enable <b>nat64_enable</b> .<br><b>false:</b> Disable <b>nat64_enable</b> . |

**Table 5-411** ListenerInsertHeaders

| Parameter                      | Type    | Description                                                                                                                                                                                                                  |
|--------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-ELB-IP             | Boolean | <b>Definition:</b> If <b>X-Forwarded-ELB-IP</b> is set to <b>true</b> , the load balancer EIP will be stored in the <b>X-Forwarded-ELB-IP</b> header and passed to backend servers.                                          |
| X-Forwarded-Port               | Boolean | <b>Definition:</b> If <b>X-Forwarded-Port</b> is set to <b>true</b> , the listening port of the load balancer will be stored in the <b>X-Forwarded-Port</b> header and passed to backend servers.                            |
| X-Forwarded-For-Port           | Boolean | <b>Definition:</b> If <b>X-Forwarded-For-Port</b> is set to <b>true</b> , the source port of the client will be stored in the HTTP header and passed to backend servers.                                                     |
| X-Forwarded-Host               | Boolean | <b>Definition:</b> If <b>X-Forwarded-Host</b> is set to <b>true</b> , the client host can be stored in the <b>X-Forwarded-Host</b> header and passed to backend servers.                                                     |
| X-Forwarded-Proto              | Boolean | <b>Definition:</b> If <b>X-Forwarded-Proto</b> is set to <b>true</b> , the listener protocol of the load balancer can be stored in the <b>X-Forwarded-Proto</b> header and passed to backend servers.                        |
| X-Real-IP                      | Boolean | <b>Definition:</b> If <b>X-Real-IP</b> is set to <b>true</b> , the client IP address can be stored in the <b>X-Real-IP</b> header and passed to backend servers.                                                             |
| X-Forwarded-ELB-ID             | Boolean | <b>Definition:</b> If <b>X-Forwarded-ELB-ID</b> is set to <b>true</b> , the load balancer ID can be stored in the <b>X-Forwarded-ELB-ID</b> header and passed to backend servers.                                            |
| X-Forwarded-TLS-Certificate-ID | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Certificate-ID</b> is set to <b>true</b> , the certificate ID of the load balancer can be stored in the <b>X-Forwarded-TLS-Certificate-ID</b> header and passed to backend servers. |
| X-Forwarded-TLS-Protocol       | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Protocol</b> is set to <b>true</b> , the algorithm protocol of the load balancer can be stored in the <b>X-Forwarded-TLS-Protocol</b> header and passed to backend servers.         |

| Parameter                      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-TLS-Cipher         | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Cipher</b> is set to <b>true</b> , the algorithm suite of the load balancer can be stored in the <b>X-Forwarded-TLS-Cipher</b> header and passed to backend servers.                                                                                                                                                                                                            |
| X-Forwarded-TLS-Protocol-alias | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-TLS-Protocol header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-TLS-Protocol</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-TLS-Cipher-alias   | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-TLS-Cipher header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-TLS-Cipher</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A     |

| Parameter                               | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-For-Processing-Mode         | String  | <p><b>Definition:</b> Specifies how the X-Forwarded-For header will be handled.</p> <ul style="list-style-type: none"><li>• <b>append:</b> The IP address of the last hop will be included in the X-Forwarded-For header and sent to the backend server.</li><li>• <b>remove:</b> The X-Forwarded-For header will be deleted before the request is sent to the backend server, regardless of whether the request carries the X-Forwarded-For header.</li><li>• <b>preserve:</b> The existing X-Forwarded-For header will be retained in the request.</li></ul> <p><b>Constraints:</b> This parameter is available only for HTTP, HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>append</b>, <b>remove</b>, or <b>preserve</b></p> <p><b>Default value:</b> <b>append</b></p> |
| X-Forwarded-Clientcert-subjectdn-enable | Boolean | <p><b>Definition:</b> Specifies whether to transfer the owner information of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-subjectdn header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                                                                                                                                                                                                                                                                                                                                                               |
| X-Forwarded-Clientcert-subjectdn-alias  | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-subjectdn header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-subjectdn-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                  |



| Parameter                                 | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-issuerdn-enable    | Boolean | <p><b>Definition:</b> Specifies whether to transfer the issuer information of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-issuerdn header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> true or false</p> <p><b>Default value:</b> false</p>                                                                                 |
| X-Forwarded-Clientcert-issuerdn-alias     | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-issuerdn header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-issuerdn-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |
| X-Forwarded-Clientcert-fingerprint-enable | Boolean | <p><b>Definition:</b> Specifies whether to transfer the fingerprint of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-fingerprint header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> true or false</p> <p><b>Default value:</b> false</p>                                                                                     |

| Parameter                                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-fingerprint-alias   | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-fingerprint header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-fingerprint-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>          |
| X-Forwarded-Clientcert-clientverify-enable | Boolean | <p><b>Definition:</b> Specifies whether to transfer the verification result of the client certificate that accesses the load balancer through the <b>X-Forwarded-Clientcert-clientverify</b> header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                               |
| X-Forwarded-Clientcert-clientverify-alias  | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert-clientverify</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-clientverify-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-serialnumber-enable | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate serial number through the <b>X-Forwarded-Clientcert-serialnumber</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                                                  |
| X-Forwarded-Clientcert-serialnumber-alias  | String  | <b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert-serialnumber</b> header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-serialnumber-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-enable              | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate content through the <b>X-Forwarded-Clientcert</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                                                                     |
| X-Forwarded-Clientcert-alias               | String  | <b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert</b> header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, QUIC, and TLS listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A                      |

| Parameter                             | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-ciphers-enable | Boolean | <b>Definition:</b> Specifies whether to transfer the TLS cipher suite supported by the client through the <b>X-Forwarded-Clientcert-ciphers</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                              |
| X-Forwarded-Clientcert-ciphers-alias  | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-ciphers header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-ciphers-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-end-enable     | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate expiration date through the <b>X-Forwarded-Clientcert-end</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                                        |
| X-Forwarded-Clientcert-end-alias      | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-end header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-end-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, QUIC, and TLS listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A    |

| Parameter                            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Alpn-Protocol-enable | Boolean | <b>Definition:</b> Specifies whether to use the X-Forwarded-Tls-Alpn-Protocol header to transfer the application protocol that the client and the load balancer negotiate to use during SSL handshakes.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                            |
| X-Forwarded-Tls-Alpn-Protocol-alias  | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Tls-Alpn-Protocol header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Alpn-Protocol-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Tls-Sni-enable           | Boolean | <b>Definition:</b> Specifies whether to transfer the domain name of the SNI certificate accessed by the client through the <b>X-Forwarded-Tls-Sni</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                      |

| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Sni-alias  | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Tls-Sni</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Sni-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |
| X-Forwarded-Tls-Ja3-enable | Boolean | <p><b>Definition:</b> Specifies whether to transfer the Ja3 fingerprint of the client that accesses the load balancer through the <b>X-Forwarded-Tls-Ja3</b> header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                               |
| X-Forwarded-Tls-Ja3-alias  | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Tls-Ja3</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Ja3-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Ja4-enable | Boolean | <b>Definition:</b> Specifies whether to transfer the Ja4 fingerprint of the client that accesses the load balancer through the X-Forwarded-Tls-Ja4 header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                     |
| X-Forwarded-Tls-Ja4-alias  | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Tls-Ja4 header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Ja4-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |

**Table 5-412** LoadBalancerRef

| Parameter | Type   | Description                                                             |
|-----------|--------|-------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A |

**Table 5-413** Tag

| Parameter | Type   | Description                                                      |
|-----------|--------|------------------------------------------------------------------|
| key       | String | <b>Definition:</b> Specifies the tag key.<br><b>Range:</b> N/A   |
| value     | String | <b>Definition:</b> Specifies the tag value.<br><b>Range:</b> N/A |

**Table 5-414** ListenerIpGroup

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                       |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipgroup_id     | String  | <b>Definition:</b> Specifies the ID of the IP address group associated with the listener.<br><br>This parameter is mandatory during creation and is optional during update.<br><b>Constraints:</b><br>The specified IP address group must exist, and the value cannot be <b>null</b> . Otherwise, the IP address group conflicts with <b>enable_ipgroup</b> .                     |
| enable_ipgroup | Boolean | <b>Definition:</b> Specifies whether access control is enabled.<br><br>A listener with access control enabled can be directly deleted.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Access control is enabled.</li><li>• <b>false:</b> Access control is disabled.</li></ul>                                                                             |
| type           | String  | <b>Definition:</b> Specifies how access to the listener is controlled.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>white:</b> A whitelist will be configured. Only IP addresses in the whitelist can access the listener.</li><li>• <b>black:</b> A blacklist will be configured. IP addresses in the blacklist are not allowed to access the listener.</li></ul> |

**Table 5-415** ListenerQuicConfig

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                    |
|---------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| quic_listener_id    | String  | <b>Definition:</b> Specifies the ID of the QUIC listener.<br><b>Range:</b> N/A                                                                                                                                                                                                                 |
| enable_quic_upgrade | Boolean | <b>Definition:</b> Specifies whether to enable QUIC upgrade. If this option is enabled, HTTPS listeners will be upgraded to QUIC listeners.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>True:</b> Enable QUIC upgrade.</li><li>• <b>False:</b> Disable QUIC upgrade.</li></ul> |



**Table 5-416** PortRange

| Parameter  | Type    | Description                                                                                                                                                                                      |
|------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| start_port | Integer | <b>Definition:</b> Specifies the start port number.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1-65535<br><b>Default value:</b> N/A                                                             |
| end_port   | Integer | <b>Definition:</b> Specifies the end port number.<br><b>Constraints:</b> The value must be greater than or equal to the start port number.<br><b>Range:</b> 1-65535<br><b>Default value:</b> N/A |

## Example Requests

Viewing the details of a listener

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/listeners/0b11747a-b139-492f-9692-2df0b1c87193
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "listener" : {
 "id" : "0b11747a-b139-492f-9692-2df0b1c87193",
 "name" : "My listener",
 "protocol_port" : 80,
 "protocol" : "TCP",
 "ipgroup" : null,
 "description" : "My listener update.",
 "default_tls_container_ref" : null,
 "admin_state_up" : true,
 "loadbalancers" : [{
 "id" : "098b2f68-af1c-41a9-8efd-69958722af62"
 }],
 "member_timeout" : null,
 "client_timeout" : null,
 "keepalive_timeout" : 300,
 "client_ca_tls_container_ref" : null,
 "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
 "sni_container_refs" : [],
 "connection_limit" : -1,
 "default_pool_id" : null,
 "tls_ciphers_policy" : "tls-1-0",
 "tags" : [],
 "created_at" : "2019-04-02T00:12:32Z",
 "updated_at" : "2019-04-02T17:43:46Z",
 "http2_enable" : true,
 "insert_headers" : {
```

```
"X-Forwarded-ELB-IP" : true
},
"transparent_client_ip_enable" : false,
"nat64_enable" : false
},
"request_id" : "1394eb39-e4c8-4177-b96d-aaff569f1833"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowListenerSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowListenerRequest request = new ShowListenerRequest();
 request.withListenerId("{listener_id}");
 try {
 ShowListenerResponse response = client.showListener(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ShowListenerRequest()
 request.listener_id = "{listener_id}"
 response = client.show_listener(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
```

```
WithCredential(auth).
Build())

request := &model.ShowListenerRequest{
 request.ListenerId = "{listener_id}"
 response, err := client.ShowListener(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.10.5 Updating a Listener

### Function

This API is used to update a listener.

### Constraints

If the provisioning status of the load balancer that the listener is added to is not **ACTIVE**, the listener cannot be updated.

### Calling Method

For details, see [Calling APIs](#).

### URI

PUT /v3/{project\_id}/elb/listeners/{listener\_id}

**Table 5-417** Path Parameters

| Parameter   | Mandatory | Type   | Description                |
|-------------|-----------|--------|----------------------------|
| listener_id | Yes       | String | Specifies the listener ID. |

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-418** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-419** Request body parameters

| Parameter | Mandatory | Type                                        | Description                                                                                             |
|-----------|-----------|---------------------------------------------|---------------------------------------------------------------------------------------------------------|
| listener  | Yes       | <a href="#">UpdateListenerOption</a> object | <b>Definition:</b> Specifies the request parameters for updating a listener.<br><b>Constraints:</b> N/A |

**Table 5-420** UpdateListenerOption

| Parameter                   | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up              | No        | Boolean | <b>Definition:</b> Specifies the administrative status of the listener.<br><b>Constraints:</b> The value can only be updated to <b>true</b> .<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                   |
| client_ca_tls_container_ref | No        | String  | <b>Definition:</b> Specifies the ID of the CA certificate used by the listener.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>This parameter is available only when <b>type</b> is set to <b>client</b>.</li><li>This parameter is not available if the listener protocol is <b>QUIC</b>.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| default_pool_id             | No        | String  | <b>Definition:</b> Specifies the ID of the default backend server group of the listener. If there is no matched forwarding policy, requests will be routed to the default backend server group.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                      |
| default_tls_container_ref   | No        | String  | <b>Definition:</b> Specifies the ID of the server certificate used by the listener.<br><b>Constraints:</b> This parameter is mandatory when the listener protocol is HTTPS, and <b>type</b> must be set to <b>server</b> .<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                      |

| Parameter      | Mandatory | Type                                         | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------|-----------|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description    | No        | String                                       | <b>Definition:</b> Provides supplementary information about the listener.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| http2_enable   | No        | Boolean                                      | <b>Definition:</b> Specifies whether to allow clients to use HTTP/2 to communicate with the load balancer for higher access performance.<br>However, the load balancer still uses HTTP/1.x to forward requests to the backend server.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is valid only for HTTPS listeners.</li><li>• This parameter is not available for QUIC listeners and the response is fixed at <b>true</b>.</li><li>• You can configure this parameter for listeners with other protocols, but it will not take effect.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| insert_headers | No        | <a href="#">ListenerInsertHeaders</a> object | <b>Definition:</b> Specifies the HTTP headers that can transmit required information to backend servers. For example, you can use the <b>X-Forwarded-ELB-IP</b> header to transmit the load balancer EIP to backend servers.<br><b>Constraints:</b> This parameter can be configured only for HTTP, HTTPS, and QUIC listeners.                                                                                                                                                                                                                                                                                                     |

| Parameter          | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name               | No        | String           | <b>Definition:</b> Specifies the name of the listener.<br><b>Constraints:</b> If you leave the listener name empty, you cannot locate it in the listener list and view its details.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                               |
| sni_container_refs | No        | Array of strings | <b>Definition:</b> Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• QUIC listeners support only RSA certificates.</li><li>• Each domain name of an SNI certificate must be unique.</li><li>• The total number of domain names of all SNI certificates cannot exceed 200.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| sni_match_algo     | No        | String           | <b>Definition:</b> Specifies how wildcard domain name matches with the SNI certificates used by the listener.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>longest_suffix:</b> indicates longest suffix match.</li><li>• <b>wildcard:</b> indicates wildcard match.</li></ul> <b>Default value:</b> wildcard                                                                                              |



| Parameter          | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls_ciphers_policy | No        | String | <p><b>Definition:</b> Specifies the security policy used by the listener.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is available only for HTTPS listeners added to a dedicated load balancer.</li><li>• This parameter is not available for QUIC listeners.</li><li>• If both <b>security_policy_id</b> and <b>tls_ciphers_policy</b> are specified, only <b>security_policy_id</b> takes effect.</li><li>• The encryption suite priority from the highest to lowest is ECC suite, RSA suite, and finally TLS 1.3 suite (supporting both ECC and RSA).</li></ul> <p><b>Range:</b> tls-1-0-inherit, tls-1-0, tls-1-1, tls-1-2, tls-1-2-strict, tls-1-2-fs, tls-1-0-with-1-3, tls-1-2-fs-with-1-3, hybrid-policy-1-0, or tls-1-2-strict-no-cbc. The default value is tls-1-2.</p> |

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| security_policy_id  | No        | String  | <p><b>Definition:</b> Specifies the ID of the custom security policy.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is available only for HTTPS listeners added to a dedicated load balancer.</li><li>• If both <b>security_policy_id</b> and <b>tls_ciphers_policy</b> are specified, only <b>security_policy_id</b> takes effect.</li><li>• The encryption suite priority from the highest to lowest is ECC suite, RSA suite, and finally TLS 1.3 suite (supporting both ECC and RSA).</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                                           |
| enable_member_retry | No        | Boolean | <p><b>Definition:</b> Specifies whether to enable health check retries for backend servers.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If a shared load balancer is associated, this parameter is available only when <b>protocol</b> is set to <b>HTTP</b> or <b>TERMINATED_HTTPS</b>.</li><li>• If a dedicated load balancer is associated, this parameter is available only when <b>protocol</b> is set to <b>HTTP</b>, <b>HTTPS</b>, or <b>QUIC</b>.</li></ul> <p><b>Range:</b> <b>true</b> indicates health check retries will be enabled. <b>false</b> indicates health check retries will be disabled.</p> <p><b>Default value:</b> N/A</p> |

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_timeout | No        | Integer | <b>Definition:</b> Specifies the timeout duration for waiting for a response from a backend server, in seconds. If the backend server fails to respond after the timeout duration elapses, the load balancer will stop waiting and return HTTP 504 Gateway Timeout to the client.<br><b>Constraints:</b> This parameter is available only for HTTP and HTTPS listeners.<br><b>Range:</b> 1-300s.<br><b>Default value:</b> N/A |
| client_timeout | No        | Integer | <b>Definition:</b> Specifies the timeout duration for waiting for a request from a client, in seconds. This parameter is available only for HTTP and HTTPS listeners.<br><b>Constraints:</b> This parameter is unavailable for TCP and UDP listeners.<br><b>Range:</b> 1-300s<br><b>Default value:</b> N/A                                                                                                                    |

| Parameter         | Mandatory | Type                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------|-----------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| keepalive_timeout | No        | Integer                                            | <p><b>Definition:</b> Specifies the idle timeout duration, in seconds. If the load balancer receives no requests within the idle timeout duration, it will disconnect the connection with the client and establish a new connection when there is a new request.</p> <p><b>Constraints:</b> This parameter is not supported by UDP listeners of shared load balancers.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• For TCP and IP listeners, the value ranges from <b>10</b> to <b>4000</b>.</li><li>• For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from <b>0</b> to <b>4000</b>.</li></ul> <p><b>Default value:</b> N/A</p> |
| ipgroup           | No        | <a href="#">UpdateListenerIpGroupOption</a> object | <p><b>Definition:</b> Specifies the IP address group associated with the listener.</p> <p><b>Constraints:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Parameter                    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| transparent_client_ip_enable | No        | Boolean | <p><b>Definition:</b> Specifies whether to pass source IP addresses of the clients to backend servers. If it is enabled, the source IP addresses of the clients will be passed to the backend server.</p> <p>This parameter applies only to TCP/UDP listeners added to a shared load balancer.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If this function is enabled, the load balancer communicates with backend servers using client IP addresses. Ensure that security group rules and access control policies are correctly configured.</li><li>• If this function is enabled, a server cannot serve as both a backend server and a client.</li><li>• If this function is enabled, the backend server specifications cannot be changed.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• TCP or UDP listeners of shared load balancers: The value can be <b>true</b> or <b>false</b>, and the default value is <b>false</b> if this parameter is not passed.</li><li>• HTTP or HTTPS listeners of shared load balancers: The value can only be <b>true</b>, and the default value is <b>true</b> if this parameter is not passed.</li><li>• All listeners of dedicated load balancers: The value can only be <b>true</b>, and the default value is <b>true</b> if this parameter is not passed.</li></ul> <p><b>Default value:</b> N/A</p> |

| Parameter             | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| proxy_protocol_enable | No        | Boolean | <p><b>Definition:</b> Specifies whether to enable ProxyProtocol to pass the source IP addresses of the clients to backend servers.</p> <p><b>Constraints:</b> This parameter is available only for TLS and TCP listeners and does not take effect for other types of listeners.</p> <p><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).</p> <p><b>Default value:</b> false</p> |

| Parameter               | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enhance_l7policy_enable | No        | Boolean | <p><b>Definition:</b> Specifies whether to enable advanced forwarding. If advanced forwarding is enabled, more flexible forwarding policies and rules are supported.</p> <p>The following scenarios are supported:</p> <ul style="list-style-type: none"><li>• <b>action</b> can be set to <b>REDIRECT_TO_URL</b> (requests will be redirected to another URL) or <b>Fixed_RESPONSE</b> (a fixed response body will be returned to clients).</li><li>• Parameters <b>priority</b>, <b>redirect_url_config</b>, and <b>fixed_response_config</b> can be specified in a forwarding policy.</li><li>• <b>type</b> can be set to <b>METHOD</b>, <b>HEADER</b>, <b>QUERY_STRING</b>, or <b>SOURCE_IP</b> for a forwarding rule.</li><li>• If <b>type</b> is set to <b>HOST_NAME</b> for a forwarding rule, the value of the forwarding rule supports wildcard asterisks (*).</li><li>• Parameter <b>conditions</b> can be specified for forwarding rules.</li></ul> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• Advanced forwarding cannot be disabled once it is enabled.</li><li>• If advanced forwarding is enabled, forwarding policy priorities are defined by <b>priority</b>. The priorities are not automatically sorted. For details, see the description of the <b>priority</b> parameter in the forwarding policy.</li></ul> |

| Parameter         | Mandatory | Type                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------|-----------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |           |                                       | <p><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).</p> <p><b>Default value:</b> false</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| quic_config       | No        | UpdateListenerQuicConfigOption object | <p><b>Definition:</b> Specifies the QUIC configuration for the current listener.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>This parameter is valid only when <b>protocol</b> is set to <b>HTTPS</b>.</li> <li>For a TCP, UDP, HTTP, or QUIC listener, if this parameter is not left blank, an error will be reported.</li> </ul> <p><b>NOTE</b><br/>Suppose the client sends an HTTP request to the server and carries information indicating that the QUIC protocol is supported. If <b>enable_quic_upgrade</b> is set to <b>true</b>, the QUIC port and version information supported by the server will be included in the response header. When the client sends both HTTPS and QUIC requests, if the QUIC request is sent and responded, the client will use the QUIC protocol to communicate with the backend servers.</p> |
| protection_status | No        | String                                | <p><b>Definition:</b> Specifies the protection status.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b></p> <ul style="list-style-type: none"> <li><b>nonProtection</b> (default): The resource is not protected.</li> <li><b>consoleProtection:</b> Modifications are not allowed on the console.</li> </ul> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |



| Parameter             | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_reason     | No        | String  | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Constraints:</b> This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>).<br><b>Default value:</b> N/A                                         |
| gzip_enable           | No        | Boolean | <b>Definition:</b> Specifies whether to enable <b>gzip_enable</b> for a load balancer.<br><b>Constraints:</b> This parameter can be configured only for HTTP, HTTPS, and QUIC listeners.<br><b>Range:</b> N/A<br><b>Default value:</b> false                                                                                                                                |
| ssl_early_data_enable | No        | Boolean | <b>Definition:</b> Specifies whether to enable zero round trip time resumption (0-RTT) for listeners.<br><b>Constraints:</b> This option can be configured only for HTTPS listeners and depends on the TLS 1.3 security policy protocols. If <b>ssl_early_data</b> is set to <b>true</b> , there may be replay attacks.<br><b>Range:</b> N/A<br><b>Default value:</b> false |

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cps          | No        | Integer | <b>Definition:</b> Specifies the maximum number of new connections that a listener can handle per second.<br><b>Constraints:</b> If the value is greater than the number defined in the load balancer flavors, the latter is used as the limit.<br><b>Range:</b> 0 to 1000000<br><b>Default value:</b> 0, indicating that the number is not limited.                                                                                                                                                                                     |
| connection   | No        | Integer | <b>Definition:</b> Specifies the maximum number of concurrent connections that a listener can handle per second.<br><b>Constraints:</b> If the value is greater than the number defined in the load balancer flavors, the latter is used as the limit.<br><b>Range:</b> 0 to 1000000<br><b>Default value:</b> 0, indicating that the number is not limited.                                                                                                                                                                              |
| nat64_enable | No        | Boolean | <b>Definition:</b><br>Specifies whether to translate between IPv4 and IPv6 addresses. This option allows a client to access IPv4 or IPv6 backend servers by accessing the IPv4 or IPv6 address of a load balancer.<br><b>Constraints:</b><br>This option can only be enabled for TCP and UDP listeners. <b>nat64_enable</b> is mutually exclusive with <b>transparent_client_ip_enable</b> .<br><b>Range:</b><br><b>true:</b> Enable <b>nat64_enable</b> .<br><b>false:</b> Disable <b>nat64_enable</b> .<br><b>Default value:</b> false |

**Table 5-421** ListenerInsertHeaders

| Parameter            | Mandatory | Type    | Description                                                                                                                                                                                           |
|----------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-ELB-IP   | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-ELB-IP</b> is set to <b>true</b> , the load balancer EIP will be stored in the <b>X-Forwarded-ELB-IP</b> header and passed to backend servers.                   |
| X-Forwarded-Port     | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-Port</b> is set to <b>true</b> , the listening port of the load balancer will be stored in the <b>X-Forwarded-Port</b> header and passed to backend servers.     |
| X-Forwarded-For-Port | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-For-Port</b> is set to <b>true</b> , the source port of the client will be stored in the HTTP header and passed to backend servers.                              |
| X-Forwarded-Host     | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-Host</b> is set to <b>true</b> , the client host can be stored in the <b>X-Forwarded-Host</b> header and passed to backend servers.                              |
| X-Forwarded-Proto    | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-Proto</b> is set to <b>true</b> , the listener protocol of the load balancer can be stored in the <b>X-Forwarded-Proto</b> header and passed to backend servers. |
| X-Real-IP            | No        | Boolean | <b>Definition:</b> If <b>X-Real-IP</b> is set to <b>true</b> , the client IP address can be stored in the <b>X-Real-IP</b> header and passed to backend servers.                                      |
| X-Forwarded-ELB-ID   | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-ELB-ID</b> is set to <b>true</b> , the load balancer ID can be stored in the <b>X-Forwarded-ELB-ID</b> header and passed to backend servers.                     |

| Parameter                      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-TLS-Certificate-ID | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Certificate-ID</b> is set to <b>true</b> , the certificate ID of the load balancer can be stored in the <b>X-Forwarded-TLS-Certificate-ID</b> header and passed to backend servers.                                                                                                                                                                                             |
| X-Forwarded-TLS-Protocol       | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Protocol</b> is set to <b>true</b> , the algorithm protocol of the load balancer can be stored in the <b>X-Forwarded-TLS-Protocol</b> header and passed to backend servers.                                                                                                                                                                                                     |
| X-Forwarded-TLS-Cipher         | No        | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Cipher</b> is set to <b>true</b> , the algorithm suite of the load balancer can be stored in the <b>X-Forwarded-TLS-Cipher</b> header and passed to backend servers.                                                                                                                                                                                                            |
| X-Forwarded-TLS-Protocol-alias | No        | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-TLS-Protocol header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-TLS-Protocol</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |

| Parameter                       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-TLS-Cipher-alias    | No        | String | <p><b>Definition:</b> Specifies the name of the X-Forwarded-TLS-Cipher header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-TLS-Cipher</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                             |
| X-Forwarded-For-Processing-Mode | No        | String | <p><b>Definition:</b> Specifies how the X-Forwarded-For header will be handled.</p> <ul style="list-style-type: none"><li>• <b>append:</b> The IP address of the last hop will be included in the X-Forwarded-For header and sent to the backend server.</li><li>• <b>remove:</b> The X-Forwarded-For header will be deleted before the request is sent to the backend server, regardless of whether the request carries the X-Forwarded-For header.</li><li>• <b>preserve:</b> The existing X-Forwarded-For header will be retained in the request.</li></ul> <p><b>Constraints:</b> This parameter is available only for HTTP, HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>append</b>, <b>remove</b>, or <b>preserve</b></p> <p><b>Default value:</b> <b>append</b></p> |

| Parameter                               | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-subjectdn-enable | No        | Boolean | <b>Definition:</b> Specifies whether to transfer the owner information of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-subjectdn header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                    |
| X-Forwarded-Clientcert-subjectdn-alias  | No        | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-subjectdn header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-subjectdn-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-issuerdn-enable  | No        | Boolean | <b>Definition:</b> Specifies whether to transfer the issuer information of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-issuerdn header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                    |

| Parameter                                 | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-issuerdn-alias     | No        | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-issuerdn header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-issuerdn-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>       |
| X-Forwarded-Clientcert-fingerprint-enable | No        | Boolean | <p><b>Definition:</b> Specifies whether to transfer the fingerprint of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-fingerprint header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                                      |
| X-Forwarded-Clientcert-fingerprint-alias  | No        | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-fingerprint header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-fingerprint-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                                  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-clientverify-enable | No        | Boolean | <b>Definition:</b> Specifies whether to transfer the verification result of the client certificate that accesses the load balancer through the <b>X-Forwarded-Clientcert-clientverify</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                     |
| X-Forwarded-Clientcert-clientverify-alias  | No        | String  | <b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert-clientverify</b> header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-clientverify-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-serialnumber-enable | No        | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate serial number through the <b>X-Forwarded-Clientcert-serialnumber</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                                                  |



| Parameter                                 | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-serialnumber-alias | No        | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert-serialnumber</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-serialnumber-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |
| X-Forwarded-Clientcert-enable             | No        | Boolean | <p><b>Definition:</b> Specifies whether to transfer the client certificate content through the <b>X-Forwarded-Clientcert</b> header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                                                                                               |
| X-Forwarded-Clientcert-alias              | No        | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, QUIC, and TLS listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>                      |

| Parameter                             | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-ciphers-enable | No        | Boolean | <b>Definition:</b> Specifies whether to transfer the TLS cipher suite supported by the client through the <b>X-Forwarded-Clientcert-ciphers</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                              |
| X-Forwarded-Clientcert-ciphers-alias  | No        | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-ciphers header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-ciphers-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-end-enable     | No        | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate expiration date through the <b>X-Forwarded-Clientcert-end</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                                        |

| Parameter                            | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-end-alias     | No        | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-end header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-end-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, QUIC, and TLS listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>  |
| X-Forwarded-Tls-Alpn-Protocol-enable | No        | Boolean | <p><b>Definition:</b> Specifies whether to use the X-Forwarded-Tls-Alpn-Protocol header to transfer the application protocol that the client and the load balancer negotiate to use during SSL handshakes.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                      |
| X-Forwarded-Tls-Alpn-Protocol-alias  | No        | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Tls-Alpn-Protocol header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Alpn-Protocol-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Sni-enable | No        | Boolean | <b>Definition:</b> Specifies whether to transfer the domain name of the SNI certificate accessed by the client through the <b>X-Forwarded-Tls-Sni</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                         |
| X-Forwarded-Tls-Sni-alias  | No        | String  | <b>Definition:</b> Specifies the name of the <b>X-Forwarded-Tls-Sni</b> header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Sni-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Tls-Ja3-enable | No        | Boolean | <b>Definition:</b> Specifies whether to transfer the Ja3 fingerprint of the client that accesses the load balancer through the <b>X-Forwarded-Tls-Ja3</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                     |

| Parameter                  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Ja3-alias  | No        | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Tls-Ja3</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Ja3-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |
| X-Forwarded-Tls-Ja4-enable | No        | Boolean | <p><b>Definition:</b> Specifies whether to transfer the Ja4 fingerprint of the client that accesses the load balancer through the X-Forwarded-Tls-Ja4 header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                                      |
| X-Forwarded-Tls-Ja4-alias  | No        | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Tls-Ja4 header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Ja4-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>        |

**Table 5-422** UpdateListenerIpGroupOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipgroup_id     | No        | String  | <b>Definition:</b> Specifies the ID of the IP address group associated with the listener. This parameter is mandatory during creation and is optional during update.<br><b>Constraints:</b> The specified IP address group must exist, and the value cannot be <b>null</b> . Otherwise, the IP address group conflicts with <b>enable_ipgroup</b> .<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                  |
| enable_ipgroup | No        | Boolean | <b>Definition:</b> Specifies whether to enable access control. A listener with access control enabled can be directly deleted.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Enable access control.</li><li>• <b>false:</b> Disable access control.</li></ul> <b>Default value:</b> N/A                                                                                             |
| type           | No        | String  | <b>Definition:</b> Specifies how access to the listener is controlled.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>white:</b> A whitelist will be configured. Only IP addresses in the whitelist can access the listener.</li><li>• <b>black:</b> A blacklist will be configured. IP addresses in the blacklist are not allowed to access the listener.</li></ul> <b>Default value:</b> N/A |

**Table 5-423** UpdateListenerQuicConfigOption

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                         |
|---------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| quic_listener_id    | No        | String  | <b>Definition:</b> Specifies the ID of the QUIC listener.<br><b>Constraints:</b> The listener specified by <b>quic_listener_id</b> must exist. The listener protocol must be <b>QUIC</b> and cannot be set to <b>null</b> . Otherwise, it will conflict with <b>enable_quic_upgrade</b> .<br><b>Range:</b> N/A<br><b>Default value:</b> N/A         |
| enable_quic_upgrade | No        | Boolean | <b>Definition:</b> Specifies whether to enable QUIC upgrade. If this option is enabled, HTTPS listeners will be upgraded to QUIC listeners.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>True:</b> Enable QUIC upgrade.</li><li>• <b>False:</b> Disable QUIC upgrade.</li></ul> <b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-424** Response body parameters

| Parameter  | Type                   | Description                                                                                                                                                                          |
|------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                 | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| listener   | <b>Listener</b> object | <b>Definition:</b> Specifies the listener information.<br><b>Constraints:</b> N/A                                                                                                    |

**Table 5-425** Listener

| Parameter                   | Type    | Description                                                                                                                                                                                                                                                |
|-----------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up              | Boolean | <b>Definition:</b> Specifies the administrative status of the listener.<br><b>Default value:</b> true                                                                                                                                                      |
| client_ca_tls_container_ref | String  | <b>Definition:</b> Specifies the ID of the CA certificate used by the listener. This parameter is available only when <b>type</b> is set to <b>client</b> .<br><b>Default value:</b> N/A                                                                   |
| connection_limit            | Integer | <b>Definition:</b> Specifies the maximum number of connections that the listener can establish with backend servers.<br><b>Range:</b> an integer greater than or equal to -1                                                                               |
| created_at                  | String  | <b>Definition:</b> Specifies the time when the listener was created.<br><b>Range:</b> N/A<br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> , for example, 2021-07-30T12:03:44Z.                                                       |
| default_pool_id             | String  | <b>Definition:</b> Specifies the ID of the default backend server group of the listener. If there is no matched forwarding policy, requests will be routed to the default backend server group.<br><b>Range:</b> N/A                                       |
| default_tls_container_ref   | String  | <b>Definition:</b> Specifies the ID of the server certificate used by the listener.<br><b>Default value:</b> N/A                                                                                                                                           |
| description                 | String  | <b>Definition:</b> Provides supplementary information about the listener.<br><b>Range:</b> N/A                                                                                                                                                             |
| http2_enable                | Boolean | <b>Definition:</b> Specifies whether to allow clients to use HTTP/2 to communicate with the load balancer for higher access performance.<br>However, the load balancer still uses HTTP/1.x to forward requests to the backend server.<br><b>Range:</b> N/A |



| Parameter             | Type                                             | Description                                                                                                                                                                                                                  |
|-----------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                    | String                                           | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A                                                                                                                                                           |
| insert_headers        | <a href="#">ListenerInsertHeaders</a> object     | <b>Definition:</b> Specifies the HTTP headers that can transmit required information to backend servers. For example, you can use the <b>X-Forwarded-ELB-IP</b> header to transmit the load balancer EIP to backend servers. |
| loadbalancers         | Array of <a href="#">LoadBalancerRef</a> objects | <b>Definition:</b> Specifies the ID of the load balancer that the listener is added to. A listener can be associated with only one load balancer.                                                                            |
| name                  | String                                           | <b>Definition:</b> Specifies the name of the listener. If you leave the listener name empty, you cannot locate it in the listener list and view its details.<br><b>Range:</b> N/A                                            |
| project_id            | String                                           | <b>Definition:</b> Specifies the ID of the project that the listener belongs to.<br><b>Range:</b> N/A                                                                                                                        |
| enterprise_project_id | String                                           | <b>Definition:</b> Specifies the enterprise project ID.<br><b>Range:</b> N/A                                                                                                                                                 |
| protocol              | String                                           | <b>Definition:</b> Specifies the protocol of the listener.<br><b>Range:</b> TCP, UDP, HTTP, HTTPS, TERMINATED_HTTPS, QUIC, IP, or TLS. IP is only available for listeners that will be added to gateway load balancers.      |
| protocol_port         | Integer                                          | <b>Definition:</b> Specifies the port used by the listener.<br><b>Default value:</b> N/A                                                                                                                                     |
| sni_container_refs    | Array of strings                                 | <b>Definition:</b> Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener.<br><b>Range:</b> N/A                                                                                  |

| Parameter           | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|--------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| sni_match_algo      | String                               | <b>Definition:</b> Specifies how wildcard domain name matches with the SNI certificates used by the listener.<br><b>Range:</b> <b>longest_suffix</b> indicates longest suffix match. <b>wildcard</b> indicates wildcard match.                                                                                                                                                                                                                                                                                                                    |
| tags                | Array of <a href="#">Tag</a> objects | <b>Definition:</b> Lists the tags.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| updated_at          | String                               | <b>Definition:</b> Specifies the time when the listener was updated.<br><b>Range:</b> The value must be in the format of <i>yyyy-MM-dd'THH:mm:ss'Z'</i> , for example, 2021-07-30T12:03:44Z.                                                                                                                                                                                                                                                                                                                                                      |
| tls_ciphers_policy  | String                               | <b>Definition:</b> Specifies the security policy used by the listener.<br><b>Range:</b> tls-1-0-inherit, tls-1-0, tls-1-1, tls-1-2, tls-1-2-strict, tls-1-2-fs, tls-1-0-with-1-3, tls-1-2-fs-with-1-3, hybrid-policy-1-0, or tls-1-2-strict-no-cbc. The default value is tls-1-2.                                                                                                                                                                                                                                                                 |
| security_policy_id  | String                               | <b>Definition:</b> Specifies the ID of the custom security policy.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| enable_member_retry | Boolean                              | <b>Definition:</b> Specifies whether to enable health check retries for backend servers.<br><b>Range:</b> <b>true</b> indicates health check retries will be enabled. <b>false</b> indicates health check retries will be disabled.                                                                                                                                                                                                                                                                                                               |
| keepalive_timeout   | Integer                              | <b>Definition:</b> Specifies the idle timeout duration, in seconds. If the load balancer receives no requests within the idle timeout duration, it will disconnect the connection with the client and establish a new connection when there is a new request.<br><b>Range:</b> <ul style="list-style-type: none"><li>• For TCP and IP listeners, the value ranges from 10s to 4000s. The default value is 300s.</li><li>• For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0s to 4000s. The default value is 60s.</li></ul> |

| Parameter      | Type                                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| client_timeout | Integer                                | <b>Definition:</b> Specifies the timeout duration for waiting for a response from a client, in seconds. There are two situations: <ul style="list-style-type: none"><li>• If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted.</li><li>• If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected.</li></ul> <b>Range:</b> 1-300 |
| member_timeout | Integer                                | <b>Definition:</b> Specifies the timeout duration for waiting for a response from a backend server, in seconds. If the backend server fails to respond after the timeout duration elapses, the load balancer will stop waiting and return HTTP 504 Gateway Timeout to the client.<br><b>Range:</b> 1-300                                                                                                                                                                                                       |
| ipgroup        | <a href="#">ListenerIpGroup</a> object | <b>Definition:</b> Specifies the IP address group associated with the listener.                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Parameter                    | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| transparent_client_ip_enable | Boolean | <p><b>Definition:</b> Specifies whether to pass source IP addresses of the clients to backend servers. If it is enabled, the source IP addresses of the clients will be passed to the backend server.</p> <p>This parameter applies only to TCP/UDP listeners added to a shared load balancer.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• TCP or UDP listeners of shared load balancers: The value can be <b>true</b> or <b>false</b>, and the default value is <b>false</b> if this parameter is not passed.</li><li>• HTTP or HTTPS listeners of shared load balancers: The value can only be <b>true</b>, and the default value is <b>true</b> if this parameter is not passed.</li><li>• All listeners of dedicated load balancers: The value can only be <b>true</b>, and the default value is <b>true</b> if this parameter is not passed.</li></ul> |
| proxy_protocol_enable        | Boolean | <p><b>Definition:</b> Specifies whether to enable ProxyProtocol to pass the source IP addresses of the clients to backend servers. This parameter is available only for TLS listeners and does not take effect for other types of listeners.</p> <p><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Parameter               | Type                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------|-------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enhance_l7policy_enable | Boolean                                   | <p><b>Definition:</b> Specifies whether to enable advanced forwarding. If advanced forwarding is enabled, more flexible forwarding policies and rules are supported.</p> <p>The following scenarios are supported:</p> <ul style="list-style-type: none"><li>• <b>action</b> can be set to <b>REDIRECT_TO_URL</b> (requests will be redirected to another URL) or <b>Fixed_RESPONSE</b> (a fixed response body will be returned to clients).</li><li>• Parameters <b>priority</b>, <b>redirect_url_config</b>, and <b>fixed_response_config</b> can be specified in a forwarding policy.</li><li>• <b>type</b> can be set to <b>METHOD</b>, <b>HEADER</b>, <b>QUERY_STRING</b>, or <b>SOURCE_IP</b> for a forwarding rule.</li><li>• If <b>type</b> is set to <b>HOST_NAME</b> for a forwarding rule, the value of the forwarding rule supports wildcard asterisks (*).</li><li>• Parameter <b>conditions</b> can be specified for forwarding rules.</li></ul> <p><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).</p> |
| quic_config             | <a href="#">ListenerQuicConfig</a> object | <p><b>Definition:</b> Specifies the QUIC configuration for the current listener.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| protection_status       | String                                    | <p><b>Definition:</b> Specifies the protection status.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>nonProtection</b>: The resource is not protected.</li><li>• <b>consoleProtection</b>: Modification is not allowed on the console.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| protection_reason       | String                                    | <p><b>Definition:</b> Specifies why modification protection is enabled.</p> <p><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (&lt;&gt;).</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Parameter             | Type                              | Description                                                                                                                                                                                                                                                                                                                  |
|-----------------------|-----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| gzip_enable           | Boolean                           | <b>Definition:</b> Specifies whether to enable <b>gzip_enable</b> for a load balancer.<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).                                                                                                                             |
| port_ranges           | Array of <b>PortRange</b> objects | <b>Definition:</b> Specifies one or more port ranges, including the start and end ports.                                                                                                                                                                                                                                     |
| ssl_early_data_enable | Boolean                           | <b>Definition:</b> Specifies whether to enable zero round trip time resumption (0-RTT) for listeners.<br><b>Constraints:</b> This option can be configured only for HTTPS listeners and depends on the TLS 1.3 security policy protocols.                                                                                    |
| cps                   | Integer                           | <b>Definition:</b> Specifies the maximum number of new connections that a listener can handle per second. If the value is greater than the number defined in the load balancer flavors, the latter is used as the limit.<br><b>Range:</b> 0 to 1000000                                                                       |
| connection            | Integer                           | <b>Definition:</b> Specifies the maximum number of concurrent connections that a listener can handle per second. If the value is greater than the number defined in the load balancer flavors, the latter is used as the limit.<br><b>Range:</b> 0 to 1000000                                                                |
| nat64_enable          | Boolean                           | <b>Definition:</b> Specifies whether to translate between IPv4 and IPv6 addresses. This option allows a client to access IPv4 or IPv6 backend servers by accessing the IPv4 or IPv6 address of a load balancer.<br><b>Range:</b><br><b>true:</b> Enable <b>nat64_enable</b> .<br><b>false:</b> Disable <b>nat64_enable</b> . |

**Table 5-426** ListenerInsertHeaders

| Parameter                      | Type    | Description                                                                                                                                                                                                                  |
|--------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-ELB-IP             | Boolean | <b>Definition:</b> If <b>X-Forwarded-ELB-IP</b> is set to <b>true</b> , the load balancer EIP will be stored in the <b>X-Forwarded-ELB-IP</b> header and passed to backend servers.                                          |
| X-Forwarded-Port               | Boolean | <b>Definition:</b> If <b>X-Forwarded-Port</b> is set to <b>true</b> , the listening port of the load balancer will be stored in the <b>X-Forwarded-Port</b> header and passed to backend servers.                            |
| X-Forwarded-For-Port           | Boolean | <b>Definition:</b> If <b>X-Forwarded-For-Port</b> is set to <b>true</b> , the source port of the client will be stored in the HTTP header and passed to backend servers.                                                     |
| X-Forwarded-Host               | Boolean | <b>Definition:</b> If <b>X-Forwarded-Host</b> is set to <b>true</b> , the client host can be stored in the <b>X-Forwarded-Host</b> header and passed to backend servers.                                                     |
| X-Forwarded-Proto              | Boolean | <b>Definition:</b> If <b>X-Forwarded-Proto</b> is set to <b>true</b> , the listener protocol of the load balancer can be stored in the <b>X-Forwarded-Proto</b> header and passed to backend servers.                        |
| X-Real-IP                      | Boolean | <b>Definition:</b> If <b>X-Real-IP</b> is set to <b>true</b> , the client IP address can be stored in the <b>X-Real-IP</b> header and passed to backend servers.                                                             |
| X-Forwarded-ELB-ID             | Boolean | <b>Definition:</b> If <b>X-Forwarded-ELB-ID</b> is set to <b>true</b> , the load balancer ID can be stored in the <b>X-Forwarded-ELB-ID</b> header and passed to backend servers.                                            |
| X-Forwarded-TLS-Certificate-ID | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Certificate-ID</b> is set to <b>true</b> , the certificate ID of the load balancer can be stored in the <b>X-Forwarded-TLS-Certificate-ID</b> header and passed to backend servers. |
| X-Forwarded-TLS-Protocol       | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Protocol</b> is set to <b>true</b> , the algorithm protocol of the load balancer can be stored in the <b>X-Forwarded-TLS-Protocol</b> header and passed to backend servers.         |

| Parameter                      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-TLS-Cipher         | Boolean | <b>Definition:</b> If <b>X-Forwarded-TLS-Cipher</b> is set to <b>true</b> , the algorithm suite of the load balancer can be stored in the <b>X-Forwarded-TLS-Cipher</b> header and passed to backend servers.                                                                                                                                                                                                            |
| X-Forwarded-TLS-Protocol-alias | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-TLS-Protocol header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-TLS-Protocol</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-TLS-Cipher-alias   | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-TLS-Cipher header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-TLS-Cipher</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A     |



| Parameter                               | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-For-Processing-Mode         | String  | <p><b>Definition:</b> Specifies how the X-Forwarded-For header will be handled.</p> <ul style="list-style-type: none"><li>• <b>append:</b> The IP address of the last hop will be included in the X-Forwarded-For header and sent to the backend server.</li><li>• <b>remove:</b> The X-Forwarded-For header will be deleted before the request is sent to the backend server, regardless of whether the request carries the X-Forwarded-For header.</li><li>• <b>preserve:</b> The existing X-Forwarded-For header will be retained in the request.</li></ul> <p><b>Constraints:</b> This parameter is available only for HTTP, HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>append</b>, <b>remove</b>, or <b>preserve</b></p> <p><b>Default value:</b> <b>append</b></p> |
| X-Forwarded-Clientcert-subjectdn-enable | Boolean | <p><b>Definition:</b> Specifies whether to transfer the owner information of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-subjectdn header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                                                                                                                                                                                                                                                                                                                                                               |
| X-Forwarded-Clientcert-subjectdn-alias  | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-subjectdn header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-subjectdn-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                  |

| Parameter                                 | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-------------------------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-issuerdn-enable    | Boolean | <b>Definition:</b> Specifies whether to transfer the issuer information of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-issuerdn header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                  |
| X-Forwarded-Clientcert-issuerdn-alias     | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-issuerdn header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-issuerdn-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-fingerprint-enable | Boolean | <b>Definition:</b> Specifies whether to transfer the fingerprint of the client certificate that accesses the load balancer through the X-Forwarded-Clientcert-fingerprint header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                      |

| Parameter                                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-fingerprint-alias   | String  | <p><b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-fingerprint header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-fingerprint-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p>          |
| X-Forwarded-Clientcert-clientverify-enable | Boolean | <p><b>Definition:</b> Specifies whether to transfer the verification result of the client certificate that accesses the load balancer through the <b>X-Forwarded-Clientcert-clientverify</b> header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                               |
| X-Forwarded-Clientcert-clientverify-alias  | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert-clientverify</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-clientverify-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-serialnumber-enable | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate serial number through the <b>X-Forwarded-Clientcert-serialnumber</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                                                  |
| X-Forwarded-Clientcert-serialnumber-alias  | String  | <b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert-serialnumber</b> header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-serialnumber-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-enable              | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate content through the <b>X-Forwarded-Clientcert</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                                                                     |
| X-Forwarded-Clientcert-alias               | String  | <b>Definition:</b> Specifies the name of the <b>X-Forwarded-Clientcert</b> header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, QUIC, and TLS listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A                      |

| Parameter                             | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Clientcert-ciphers-enable | Boolean | <b>Definition:</b> Specifies whether to transfer the TLS cipher suite supported by the client through the <b>X-Forwarded-Clientcert-ciphers</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                              |
| X-Forwarded-Clientcert-ciphers-alias  | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-ciphers header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-ciphers-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Clientcert-end-enable     | Boolean | <b>Definition:</b> Specifies whether to transfer the client certificate expiration date through the <b>X-Forwarded-Clientcert-end</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                                        |
| X-Forwarded-Clientcert-end-alias      | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Clientcert-end header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Clientcert-end-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, QUIC, and TLS listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A    |

| Parameter                            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Alpn-Protocol-enable | Boolean | <b>Definition:</b> Specifies whether to use the X-Forwarded-Tls-Alpn-Protocol header to transfer the application protocol that the client and the load balancer negotiate to use during SSL handshakes.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                            |
| X-Forwarded-Tls-Alpn-Protocol-alias  | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Tls-Alpn-Protocol header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Alpn-Protocol-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |
| X-Forwarded-Tls-Sni-enable           | Boolean | <b>Definition:</b> Specifies whether to transfer the domain name of the SNI certificate accessed by the client through the <b>X-Forwarded-Tls-Sni</b> header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                                      |

| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Sni-alias  | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Tls-Sni</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Sni-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |
| X-Forwarded-Tls-Ja3-enable | Boolean | <p><b>Definition:</b> Specifies whether to transfer the Ja3 fingerprint of the client that accesses the load balancer through the <b>X-Forwarded-Tls-Ja3</b> header.</p> <p><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> <b>true</b> or <b>false</b></p> <p><b>Default value:</b> <b>false</b></p>                                                               |
| X-Forwarded-Tls-Ja3-alias  | String  | <p><b>Definition:</b> Specifies the name of the <b>X-Forwarded-Tls-Ja3</b> header.</p> <p><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Ja3-enable</b> is set to <b>true</b>. This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.</p> <p><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Tls-Ja4-enable | Boolean | <b>Definition:</b> Specifies whether to transfer the Ja4 fingerprint of the client that accesses the load balancer through the X-Forwarded-Tls-Ja4 header.<br><b>Constraints:</b> This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> true or false<br><b>Default value:</b> false                                                                                     |
| X-Forwarded-Tls-Ja4-alias  | String  | <b>Definition:</b> Specifies the name of the X-Forwarded-Tls-Ja4 header.<br><b>Constraints:</b> This parameter takes effect only if <b>X-Forwarded-Tls-Ja4-enable</b> is set to <b>true</b> . This parameter is available only for HTTPS, TERMINATED_HTTPS, and QUIC listeners.<br><b>Range:</b> 1 to 40 characters. Only letters, hyphens (-), underscores (_), and digits are allowed.<br><b>Default value:</b> N/A |

**Table 5-427** LoadBalancerRef

| Parameter | Type   | Description                                                             |
|-----------|--------|-------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A |

**Table 5-428** Tag

| Parameter | Type   | Description                                                      |
|-----------|--------|------------------------------------------------------------------|
| key       | String | <b>Definition:</b> Specifies the tag key.<br><b>Range:</b> N/A   |
| value     | String | <b>Definition:</b> Specifies the tag value.<br><b>Range:</b> N/A |



**Table 5-429** ListenerIpGroup

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                       |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ipgroup_id     | String  | <b>Definition:</b> Specifies the ID of the IP address group associated with the listener.<br><br>This parameter is mandatory during creation and is optional during update.<br><b>Constraints:</b><br>The specified IP address group must exist, and the value cannot be <b>null</b> . Otherwise, the IP address group conflicts with <b>enable_ipgroup</b> .                     |
| enable_ipgroup | Boolean | <b>Definition:</b> Specifies whether access control is enabled.<br><br>A listener with access control enabled can be directly deleted.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Access control is enabled.</li><li>• <b>false:</b> Access control is disabled.</li></ul>                                                                             |
| type           | String  | <b>Definition:</b> Specifies how access to the listener is controlled.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>white:</b> A whitelist will be configured. Only IP addresses in the whitelist can access the listener.</li><li>• <b>black:</b> A blacklist will be configured. IP addresses in the blacklist are not allowed to access the listener.</li></ul> |

**Table 5-430** ListenerQuicConfig

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                    |
|---------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| quic_listener_id    | String  | <b>Definition:</b> Specifies the ID of the QUIC listener.<br><b>Range:</b> N/A                                                                                                                                                                                                                 |
| enable_quic_upgrade | Boolean | <b>Definition:</b> Specifies whether to enable QUIC upgrade. If this option is enabled, HTTPS listeners will be upgraded to QUIC listeners.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>True:</b> Enable QUIC upgrade.</li><li>• <b>False:</b> Disable QUIC upgrade.</li></ul> |

**Table 5-431** PortRange

| Parameter  | Type    | Description                                                                                                                                                                                      |
|------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| start_port | Integer | <b>Definition:</b> Specifies the start port number.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1-65535<br><b>Default value:</b> N/A                                                             |
| end_port   | Integer | <b>Definition:</b> Specifies the end port number.<br><b>Constraints:</b> The value must be greater than or equal to the start port number.<br><b>Range:</b> 1-65535<br><b>Default value:</b> N/A |

## Example Requests

Modifying the name and description of a listener and enabling the HTTP/2 option

```
PUT https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/listeners/0b11747a-b139-492f-9692-2df0b1c87193
```

```
{
 "listener" : {
 "description" : "My listener update.",
 "name" : "My listener",
 "http2_enable" : true
 }
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "listener" : {
 "id" : "0b11747a-b139-492f-9692-2df0b1c87193",
 "name" : "My listener",
 "protocol_port" : 80,
 "protocol" : "TCP",
 "description" : "My listener update.",
 "default_tls_container_ref" : null,
 "admin_state_up" : true,
 "loadbalancers" : [{
 "id" : "098b2f68-af1c-41a9-8efd-69958722af62"
 }],
 "member_timeout" : null,
 "client_timeout" : null,
 "keepalive_timeout" : 300,
 "client_ca_tls_container_ref" : null,
 "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
 "sni_container_refs" : [],
 "connection_limit" : -1,
 }
}
```

```
"default_pool_id" : null,
"tls_ciphers_policy" : "tls-1-2",
"tags" : [],
"created_at" : "2019-04-02T00:12:32Z",
"updated_at" : "2019-04-02T17:43:46Z",
"http2_enable" : true,
"ipgroup" : null,
"insert_headers" : {
 "X-Forwarded-ELB-IP" : true
},
"transparent_client_ip_enable" : false,
"nat64_enable" : false
},
"request_id" : "5d56d89a-2271-4a75-8c02-804e3bc7b671"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Modifying the name and description of a listener and enabling the HTTP/2 option

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class UpdateListenerSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 UpdateListenerRequest request = new UpdateListenerRequest();
 request.withListenerId("{listener_id}");
 UpdateListenerRequestBody body = new UpdateListenerRequestBody();
 UpdateListenerOption listenerbody = new UpdateListenerOption();
 listenerbody.withDescription("My listener update.")
 .withHttp2Enable(true)
 .withName("My listener");
 body.withListener(listenerbody);
 request.withBody(body);
 try {
```

```
 UpdateListenerResponse response = client.updateListener(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

## Python

Modifying the name and description of a listener and enabling the HTTP/2 option

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = UpdateListenerRequest()
 request.listener_id = "{listener_id}"
 listenerbody = UpdateListenerOption(
 description="My listener update.",
 http2_enable=True,
 name="My listener"
)
 request.body = UpdateListenerRequestBody(
 listener=listenerbody
)
 response = client.update_listener(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

Modifying the name and description of a listener and enabling the HTTP/2 option

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.UpdateListenerRequest{}
 request.ListenerId = "{listener_id}"
 descriptionListener:= "My listener update."
 http2EnableListener:= true
 nameListener:= "My listener"
 listenerbody := &model.UpdateListenerOption{
 Description: &descriptionListener,
 Http2Enable: &http2EnableListener,
 Name: &nameListener,
 }
 request.Body = &model.UpdateListenerRequestBody{
 Listener: listenerbody,
 }
 response, err := client.UpdateListener(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.10.6 Deleting a Listener

### Function

This API is used to delete a listener.

### Constraints

Before you delete a listener, delete associated backend server groups or remove all backend servers in the default backend server group, and delete all forwarding policies.

### Calling Method

For details, see [Calling APIs](#).

### URI

DELETE /v3/{project\_id}/elb/listeners/{listener\_id}

**Table 5-432** Path Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id  | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| listener_id | Yes       | String | Specifies the listener ID.                                                                                                                                                                                                                                                                                 |

## Request Parameters

**Table 5-433** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 204**

Successful request.

None

## Example Requests

Deleting a listener

```
DELETE https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/listeners/0b11747a-b139-492f-9692-2df0b1c87193
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeleteListenerSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 }
}
```

```
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
DeleteListenerRequest request = new DeleteListenerRequest();
request.withListenerId("{listener_id}");
try {
 DeleteListenerResponse response = client.deleteListener(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeleteListenerRequest()
 request.listener_id = "{listener_id}"
 response = client.delete_listener(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```



## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.DeleteListenerRequest{}
 request.ListenerId = "{listener_id}"
 response, err := client.DeleteListener(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.10.7 Deleting a Listener and Its Associated Resources

### Function

This API is used to delete a listener and its associated resources, including the forwarding policies and backend server groups.

### Calling Method

For details, see [Calling APIs](#).

### URI

DELETE /v3/{project\_id}/elb/listeners/{listener\_id}/force

**Table 5-434** Path Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id  | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| listener_id | Yes       | String | Specifies the listener ID.                                                                                                                                                                                                                                                                                 |

### Request Parameters

**Table 5-435** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

### Response Parameters

**Status code: 204**

Successful request.

None

## Example Requests

Deleting a listener and its associated resources

```
DELETE https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/listeners/0b11747a-b139-492f-9692-2df0b1c87193/force
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeleteListenerForceSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();

 DeleteListenerForceRequest request = new DeleteListenerForceRequest();
 request.withListenerId("{listener_id}");
 try {
 DeleteListenerForceResponse response = client.deleteListenerForce(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 }
 }
}
```

```
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeleteListenerForceRequest()
 request.listener_id = "{listener_id}"
 response = client.delete_listener_force(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
```

```
WithAk(ak).
WithSk(sk).
WithProjectId(projectId).
Build()

client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.DeleteListenerForceRequest{}
request.ListenerId = "{listener_id}"
response, err := client.DeleteListenerForce(request)
if err == nil {
 fmt.Printf("%v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.10.8 Batch Deleting Listeners

### Function

This API is used to batch delete listeners.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/listeners/batch-delete

**Table 5-436** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-437** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-438** Request body parameters

| Parameter    | Mandatory | Type             | Description                                                                                                                                                                                       |
|--------------|-----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listener_ids | Yes       | Array of strings | <b>Definition:</b> Specifies the IDs of the listeners to be deleted.<br><b>Constraints:</b> A maximum of 10 listeners can be deleted at a time.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 202

**Table 5-439** Response body parameters

| Parameter    | Type             | Description                                       |
|--------------|------------------|---------------------------------------------------|
| job_id       | String           | Specifies the ID of the batch deletion task.      |
| listener_ids | Array of strings | Specifies the IDs of the listeners to be deleted. |

## Example Requests

Batch deleting listeners

POST https://{ELB\_Endpoint}/v3/{project\_id}/elb/listeners/batch-delete

```
{
 "listener_ids" : ["5b2513ca-3290-46ad-b723-e47afb83b4d2", "c2d6bfd6-4eae-4995-8e5d-711fa592744c"]
}
```

## Example Responses

**Status code: 202**

Successful request.

```
{
 "job_id" : "6b76f5cb-cab8-48e2-919a-0ff55d230051",
 "listener_ids" : ["5b2513ca-3290-46ad-b723-e47afb83b4d2", "c2d6bfd6-4eae-4995-8e5d-711fa592744c"]
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 202         | Successful request. |

## Error Codes

See [Error Codes](#).

# 5.11 Backend Server Group

## 5.11.1 Creating a Backend Server Group

### Function

This API is used to create a backend server group.

## Constraints

Note the following when you create a backend server group:

- If **session\_persistence** is specified, **cookie\_name** is available only when **type** is set to **APP\_COOKIE**.
- If **listener\_id** is specified, the listener must have no backend server group associated.

## Calling Method

For details, see [Calling APIs](#).

## URI

POST /v3/{project\_id}/elb/pools

**Table 5-440** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-441** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |



**Table 5-442** Request body parameters

| Parameter | Mandatory | Type                    | Description                                                                                                         |
|-----------|-----------|-------------------------|---------------------------------------------------------------------------------------------------------------------|
| pool      | Yes       | CreatePoolOption object | <b>Definition:</b> Specifies the request parameters for creating a backend server group.<br><b>Constraints:</b> N/A |

**Table 5-443** CreatePoolOption

| Parameter      | Mandatory | Type              | Description                                                                                                                                                                                        |
|----------------|-----------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean           | <b>Definition:</b> Specifies the administrative status of the backend server group.<br><b>Constraints:</b> The value can only be <b>true</b> .<br><b>Range:</b> true<br><b>Default value:</b> true |
| az_affinity    | No        | AzAffinity object | <b>Definition:</b> Specifies how AZ affinity is configured for the backend server group.<br><b>Constraints:</b> N/A                                                                                |
| description    | No        | String            | <b>Definition:</b> Provides supplementary information about the backend server group.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                 |

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| lb_algorithm | Yes       | String | <p><b>Definition:</b> Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If the value is <b>SOURCE_IP</b> or <b>QUIC_CID</b>, the weights of backend servers in the backend server group are invalid.</li><li>• <b>QUIC_CID</b> is available only when the protocol of the backend server group is QUIC.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN:</b> weighted round robin</li><li>• <b>LEAST_CONNECTIONS:</b> weighted least connections</li><li>• <b>SOURCE_IP:</b> source IP hash</li><li>• <b>QUIC_CID:</b> connection ID</li><li>• <b>2_TUPLE_HASH:</b> 2-tuple hash that is only available for IP backend server groups</li><li>• <b>3_TUPLE_HASH:</b> 3-tuple hash that is only available for IP backend server groups</li><li>• <b>5_TUPLE_HASH:</b> 5-tuple hash that is only available for IP backend server groups</li><li>• If this parameter is not specified for an IP backend server group, <b>5_TUPLE_HASH</b> is used by default.</li></ul> <p><b>Default value:</b> N/A</p> |

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listener_id     | No        | String | <b>Definition:</b> Specifies the ID of the listener with which the backend server group is associated.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>At least one of <b>listener_id</b>, <b>loadbalancer_id</b>, and <b>type</b> must be specified.</li><li>You do not need to specify <b>listener_id</b> and <b>loadbalancer_id</b> for the backend server group of a dedicated load balancer, but must specify at least one for a shared load balancer.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A      |
| loadbalancer_id | No        | String | <b>Definition:</b> Specifies the ID of the load balancer with which the backend server group is associated.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>At least one of <b>listener_id</b>, <b>loadbalancer_id</b>, and <b>type</b> must be specified.</li><li>You do not need to specify <b>listener_id</b> and <b>loadbalancer_id</b> for the backend server group of a dedicated load balancer, but must specify at least one for a shared load balancer.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| name            | No        | String | <b>Definition:</b> Specifies the backend server group name.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                               |

| Parameter  | Mandatory | Type   | Description                                                                                                                                           |
|------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | No        | String | <b>Definition:</b> Specifies the project ID of the backend server group.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol  | Yes       | String | <p><b>Definition:</b> Specifies the protocol used by the backend server group to receive requests.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If the listener's protocol is <b>UDP</b>, the protocol of the backend server group must be <b>UDP</b> or <b>QUIC</b>.</li><li>• If the listener's protocol is <b>TCP</b>, the protocol of the backend server group must be <b>TCP</b>.</li><li>• If the listener's protocol is <b>IP</b>, the protocol of the backend server group must be <b>IP</b>.</li><li>• If the listener's protocol is <b>HTTP</b>, the protocol of the backend server group must be <b>HTTP</b>.</li><li>• If the listener's protocol is <b>HTTPS</b>, the protocol of the backend server group must be <b>HTTP</b>, <b>HTTPS</b>, or <b>GRPC</b>.</li><li>• If the listener's protocol is <b>TERMINATED_HTTPS</b>, the protocol of the backend server group must be <b>HTTP</b>.</li><li>• If the listener's protocol is <b>QUIC</b>, the protocol of the backend server group must be <b>HTTP</b>, <b>HTTPS</b>, or <b>GRPC</b>.</li><li>• If the listener's protocol is <b>TLS</b>, the protocol of the backend server group can be <b>TLS</b> or <b>TCP</b>. If the protocol of the backend server group is <b>TCP</b>, <b>ip_version</b> must be set to <b>v4</b>.</li><li>• If the backend server group's protocol is <b>QUIC</b>, <b>session_persistence</b> must be set to <b>true</b> and <b>type</b> set to <b>SOURCE_IP</b>.</li></ul> |

| Parameter           | Mandatory | Type                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|---------------------|-----------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                     |           |                                           | <ul style="list-style-type: none"><li>If the backend server group's protocol is <b>GRPC</b>, <b>http2_enable</b> of the listener must be set to <b>true</b>.</li></ul> <b>Range:</b> TCP, UDP, IP, TLS, HTTP, HTTPS, GRPC, or QUIC<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| session_persistence | No        | CreatePoolSessionPersistenceOption object | <b>Definition:</b> Specifies the sticky session.<br><b>Constraints:</b> Slow start and sticky session cannot be enabled at the same time. If both are enabled, sticky session will be invalid.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| slow_start          | No        | CreatePoolSlowStartOption object          | <b>Definition:</b> Specifies slow start details. After you enable slow start, new backend servers added to the backend server group are warmed up, and the number of requests they can receive increases linearly during the configured slow start duration.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>This parameter is valid only when the backend server group protocol is HTTP, HTTPS, or GRPC. For other protocols, an error will be reported.</li><li>Slow start and sticky session cannot be enabled at the same time. If both are enabled, sticky session will be invalid.</li><li>This parameter is not supported by gateway load balancers. Please do not use it.</li></ul> |

| Parameter                         | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_deletion_protection_enable | No        | Boolean | <p><b>Definition:</b> Whether to enable removal protection for the backend server. Once the option is enabled, backend servers cannot be removed from the backend server group.</p> <p><b>Constraints:</b></p> <p>Once the option is enabled, an error will be returned when the following APIs are called to:</p> <ul style="list-style-type: none"><li>• Delete a load balancer and its associated resources (DELETE /v3/{project_id}/elb/loadbalancers/{loadbalancer_id}/force-elb).</li><li>• Delete a load balancer and its associated EIPs (POST /v3/{project_id}/elb/loadbalancers/{loadbalancer_id}/delete-cascade).</li><li>• Delete a listener and its associated resources (DELETE /v3/{project_id}/elb/listeners/{listener_id}/force).</li><li>• Delete a backend server group and its associated resources (DELETE /v3/{project_id}/elb/pools/{pool_id}/delete-cascade).</li><li>• Remove a backend server (DELETE /v3/{project_id}/elb/pools/{pool_id}/members/{member_id}).</li><li>• Remove backend servers in batches (POST /v3/{project_id}/elb/pools/{pool_id}/members/batch-delete).</li></ul> <p><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).</p> |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |        | <b>Default value:</b> false<br><b>NOTE</b><br>Disable deletion protection or removal protection for your resources before deregistering your account.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| vpc_id    | No        | String | <b>Definition:</b> Specifies the ID of the VPC where the backend server group works.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• The backend server group must be associated with the VPC.</li><li>• Only backend servers in the VPC or IP as backend servers can be added.</li><li>• <b>type</b> must be set to <b>instance</b>.</li><li>• <b>vpc_id</b> must be specified for IP backend server groups. The value must be the same as that defined by <b>vpc_id</b> for the load balancer.</li><li>• If <b>vpc_id</b> is not specified, VPC ID is determined by the VPC where the backend server works.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |



| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type      | No        | String | <p><b>Definition:</b> Specifies the backend server group type.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If this parameter is not passed, any type of backend servers can be added. <b>type</b> will be returned as an empty string.</li><li>• At least one of <b>listener_id</b>, <b>loadbalancer_id</b>, and <b>type</b> must be specified.</li><li>• You do not need to specify <b>listener_id</b> and <b>loadbalancer_id</b> for the backend server group of a dedicated load balancer, but must specify at least one for a shared load balancer.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>instance:</b> Any type of backend servers can be added. <b>vpc_id</b> is mandatory.</li><li>• <b>ip:</b> Only IP as backend servers can be added. <b>vpc_id</b> cannot be specified. <b>type</b> cannot be set to <b>ip</b> if the backend server group protocol is <b>IP</b>.</li></ul> <p><b>Default value:</b> N/A</p> |

| Parameter         | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_version        | No        | String | <b>Definition:</b> Specifies the IP address version supported by the backend server group.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• Shared load balancers: The value is fixed at <b>v4</b>.</li><li>• Dedicated load balancers: The value can be <b>dualstack</b> or <b>v4</b>. If the protocol of the backend server group is TCP or UDP, the value is <b>dualstack</b>. If the protocol of the backend server group is HTTP, the value is <b>v4</b>.</li></ul> <b>Default value:</b> N/A |
| protection_status | No        | String | <b>Definition:</b> Specifies the protection status.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection</b>: The resource is not protected.</li><li>• <b>consoleProtection</b>: Modification is not allowed on the console.</li></ul> <b>Default value:</b> <b>nonProtection</b>                                                                                                                                                                                                     |
| protection_reason | No        | String | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Constraints:</b> This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>).<br><b>Default value:</b> N/A                                                                                                                                                                                                   |

| Parameter        | Mandatory | Type                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------|-----------|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| any_port_enable  | No        | Boolean                       | <b>Definition:</b> Specifies whether to enable <b>any_port_enable</b> for a backend server group. If this option is enabled, the listener routes the requests to the backend server over the same port as the frontend port. If this option is disabled, the listener routes the requests over the port specified by <b>protocol_port</b> .<br><b>Constraints:</b><br>This option is available only for TCP, UDP, or QUIC backend server groups.<br><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).<br><b>Default value:</b> N/A |
| connection_drain | No        | <b>ConnectionDrain</b> object | <b>Definition:</b> Specifies the configurations of deregistration delay.<br>This parameter takes effect when: <ul style="list-style-type: none"><li>• A backend server is removed from a backend server group.</li><li>• A backend server is detected unhealthy or health checks fail.</li><li>• The weight of a backend server is 0.</li></ul> <b>Constraints:</b> This parameter is only available for TCP, UDP, and QUIC backend server groups and TCP and UDP listeners.                                                                                           |
| pool_health      | No        | <b>PoolHealth</b> object      | Specifies the configurations of the pool health feature.<br><b>Constraints:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Parameter              | Mandatory | Type                       | Description                                                                                                                                                                                                                                                                                                                                                                                 |
|------------------------|-----------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| public_border_group    | No        | String                     | <b>Definition:</b> Specifies the public border group.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"> <li>• <b>center:</b> public border group of the central site</li> <li>• Edge site name: public border group of an edge site</li> </ul> <b>Default value:</b> N/A                                                                                       |
| quic_cid_hash_strategy | No        | QuicCidHashStrategy object | <b>Definition:</b> Specifies multi-path forwarding configuration based on destination connection IDs.<br><b>Constraints:</b> N/A                                                                                                                                                                                                                                                            |
| enterprise_project_id  | No        | String                     | <b>Definition:</b> Specifies the ID of the enterprise project. If no enterprise project ID is specified during resource creation, 0 is returned, indicating that the resource belongs to the default enterprise project.<br><b>Constraints:</b> The enterprise project ID cannot be "", 0, or an enterprise project ID that does not exist.<br><b>Range:</b> N/A<br><b>Default value:</b> 0 |

**Table 5-444** AzAffinity

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Yes       | Boolean | <p><b>Definition:</b> Specifies whether to enable AZ affinity for the backend server group. If this parameter is set to <b>true</b>, ELB forwards traffic across the backend servers in the same AZ as the load balancer.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is available only for IP, TCP, and UDP backend server groups.</li><li>• This parameter is not available for backend server groups that are associated with TLS listeners.</li><li>• If the parameter is set to <b>true</b>, parameter <b>pool_health</b> will be ignored.</li></ul> <p><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).</p> <p><b>Default value:</b> N/A</p> |

| Parameter                            | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_minimum_healthy_member_percentage | No        | Integer | <p><b>Definition:</b> Specifies a percentage that is used to determine the health of an AZ. If the percentage of healthy servers in the AZ of the load balancer falls below the specified value, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>az_minimum_healthy_member_percentage</b> shows the percentage of backend servers that are healthy in a backend server group of an AZ. The number of healthy servers is rounded up. For example, in AZ A, if there are three backend servers in the backend server group and <b>az_minimum_healthy_member_percentage</b> is set to 66%, the number of healthy servers is rounded up to 2 (<math>3 \times 0.66 = 1.98</math>). If there are fewer than two healthy servers in AZ A, <b>az_unhealthy_fallback_strategy</b> is triggered. If <b>az_minimum_healthy_member_percentage</b> is set to 67%, the number of healthy servers is rounded up to 3 (<math>3 \times 0.67 = 2.01</math>). If there are fewer than three healthy servers in AZ A, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enable</b> is set to <b>true</b>, <b>az_minimum_healthy_member_percentage</b> and <b>az_minimum_healthy_member_count</b> cannot be set to <b>-1</b> at the same time.</li><li>• If <b>enable</b> is set to <b>true</b>, either <b>az_minimum_healthy_member_percentage</b> or <b>az_minimum_healthy_member_count</b> must be set to <b>-1</b>.</li></ul> |

| Parameter                       | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 |           |         | <p><b>Range:</b> an integer ranging from <b>-1</b> to <b>100</b>. An integer from 0 to 100 indicates the percentage of healthy servers in the AZ of the load balancer. <b>-1</b> indicates that <b>az_minimum_healthy_member_count</b> takes effect.</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| az_minimum_healthy_member_count | No        | Integer | <p><b>Definition:</b> Specifies a number that is used to determine the health of an AZ. If the number of healthy servers in the AZ of the load balancer falls below the specified value, <b>az_unhealthy_fallback_strategy</b> is triggered. <b>az_minimum_healthy_member_count</b> shows the number of healthy servers in a backend server group of an AZ.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enable</b> is set to <b>true</b>, <b>az_minimum_healthy_member_percentage</b> and <b>az_minimum_healthy_member_count</b> cannot be set to <b>-1</b> at the same time.</li><li>• If <b>enable</b> is set to <b>true</b>, either <b>az_minimum_healthy_member_percentage</b> or <b>az_minimum_healthy_member_count</b> must be set to <b>-1</b>.</li></ul> <p><b>Range:</b> an integer ranging from <b>-1</b> to <b>10000</b>. An integer from 0 to 10000 indicates the number of healthy servers in the AZ of the load balancer. <b>-1</b> indicates that <b>az_minimum_healthy_member_percentage</b> takes effect.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_unhealthy_fallback_strategy | No        | String | <p><b>Definition:</b> Specifies how traffic will be distributed across backend servers in an AZ if the percentage or number of healthy servers in the AZ of the load balancer falls below the specified value.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>forward_to_all_member_of_local_az:</b> forwards requests across all backend servers in the same AZ as the load balancer, even if some servers are unhealthy.</li><li>• <b>forward_to_healthy_member_of_remote_az:</b> forwards requests across healthy backend servers in different AZs from the load balancer.</li><li>• <b>forward_to_all_healthy_member:</b> forwards requests across healthy backend servers in all AZs.</li><li>• <b>forward_to_all_member:</b> forwards requests across all backend servers in all AZs, even if some servers are unhealthy.</li></ul> <p><b>Constraints:</b> N/A</p> <p><b>Default value:</b> forward_to_all_member_of_local_az</p> |



**Table 5-445** CreatePoolSessionPersistenceOption

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cookie_name | No        | String | <b>Definition:</b> Specifies the cookie name.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter takes effect only when <b>type</b> is set to <b>APP_COOKIE</b>. Otherwise, an error will be returned.</li><li>• This parameter is not supported by gateway load balancers. Please do not use it.</li></ul> <b>Range:</b> The value can contain a maximum of 1,024 characters.<br><b>Default value:</b> N/A                                                                                                                                                                                                                                 |
| type        | Yes       | String | <b>Definition:</b> Specifies the sticky session type.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If the protocol of the backend server group is <b>TCP</b> or <b>UDP</b>, only <b>SOURCE_IP</b> takes effect.</li><li>• If the protocol of the backend server group is <b>HTTP</b> or <b>HTTPS</b>, only <b>HTTP_COOKIE</b> and <b>APP_COOKIE</b> take effect.</li><li>• If the backend server group's protocol is <b>QUIC</b>, <b>session_persistence</b> must be set to <b>true</b> and <b>type</b> set to <b>SOURCE_IP</b>.</li></ul> <b>Range:</b> <b>SOURCE_IP</b> , <b>HTTP_COOKIE</b> , or <b>APP_COOKIE</b> .<br><b>Default value:</b> N/A |

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| persistence_timeout | No        | Integer | <b>Definition:</b> Specifies the stickiness duration, in minutes.<br><b>Constraints:</b> This parameter will not take effect when <b>type</b> is set to <b>APP_COOKIE</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>If the protocol of the backend server group is TCP or UDP, the value ranges from <b>1</b> to <b>60</b>, and the default value is <b>1</b>.</li><li>If the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>, and the default value is <b>1440</b>.</li></ul> <b>Default value:</b> N/A |

**Table 5-446** CreatePoolSlowStartOption

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                      |
|-----------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | No        | Boolean | <b>Definition:</b> Specifies whether to enable slow start.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li><b>true:</b> This option will be enabled.</li><li><b>false:</b> This option will be disabled.</li></ul> <b>Default value:</b> false |
| duration  | No        | Integer | <b>Definition:</b> Specifies the slow start duration, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> 30 to 1200, in seconds.<br><b>Default value:</b> 30                                                                                                                |

**Table 5-447** ConnectionDrain

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | No        | Boolean | <b>Definition:</b> Specifies whether to enable <b>connection_drain</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A |
| timeout   | No        | Integer | <b>Definition:</b> Specifies the deregistration delay timeout, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> 10 to 4000<br><b>Constraints:</b> N/A                                                                               |

**Table 5-448** PoolHealth

| Parameter                    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                              |
|------------------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| minimum_healthy_member_count | No        | Integer | <b>Definition:</b> Specifies the number of healthy backend servers below which the backend server group is considered as unhealthy.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0</b> (default): <b>pool_health</b> does not take effect.</li><li>• <b>1</b>: <b>pool_health</b> takes effect.</li></ul> |

**Table 5-449** QuicCidHashStrategy

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                     |
|-----------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| len       | Yes       | Integer | <b>Definition:</b> Specifies the length of the hash factor in the connection ID.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 1 to 20<br><b>Default value:</b> 3 |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                             |
|-----------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| offset    | Yes       | Integer | <b>Definition:</b> Specifies the start position in the connection ID as the hash factor.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 0 to 19<br><b>Default value:</b> 1 |

## Response Parameters

Status code: 201

**Table 5-450** Response body parameters

| Parameter  | Type               | Description                                                                                                                                                                          |
|------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String             | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| pool       | <b>Pool</b> object | <b>Definition:</b> Specifies the backend server group.                                                                                                                               |

**Table 5-451** Pool

| Parameter      | Type                     | Description                                                                                                                                                    |
|----------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean                  | <b>Definition:</b> Specifies the administrative status of the backend server group. The value can only be <b>true</b> .<br><b>Range:</b> <b>true</b> (enabled) |
| az_affinity    | <b>AzAffinity</b> object | <b>Definition:</b> Specifies how AZ affinity is configured for the backend server group.                                                                       |
| description    | String                   | <b>Definition:</b> Provides supplementary information about the backend server group.<br><b>Range:</b> N/A                                                     |

| Parameter        | Type                                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| healthmonitor_id | String                                           | <b>Definition:</b> Specifies the ID of the health check configured for the backend server group.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| id               | String                                           | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| lb_algorithm     | String                                           | <b>Definition:</b> Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN:</b> weighted round robin</li><li>• <b>LEAST_CONNECTIONS:</b> weighted least connections</li><li>• <b>SOURCE_IP:</b> source IP hash</li><li>• <b>QUIC_CID:</b> connection ID</li><li>• <b>2_TUPLE_HASH:</b> 2-tuple hash that is only available for IP backend server groups</li><li>• <b>3_TUPLE_HASH:</b> 3-tuple hash that is only available for IP backend server groups</li><li>• <b>5_TUPLE_HASH:</b> 5-tuple hash that is only available for IP backend server groups</li><li>• If this parameter is not specified for an IP backend server group, <b>5_TUPLE_HASH</b> is used by default.</li></ul> |
| listeners        | Array of <a href="#">ListenerRef</a> objects     | <b>Definition:</b> Specifies the IDs of the listeners with which the backend server group is associated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| loadbalancers    | Array of <a href="#">LoadBalancerRef</a> objects | <b>Definition:</b> Specifies the IDs of the load balancers with which the backend server group is associated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| members          | Array of <a href="#">MemberRef</a> objects       | <b>Definition:</b> Specifies the IDs of backend servers in the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Parameter           | Type                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name                | String                           | <b>Definition:</b> Specifies the backend server group name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                 |
| project_id          | String                           | <b>Definition:</b> Specifies the project ID of the backend server group.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                    |
| protocol            | String                           | <b>Definition:</b> Specifies the protocol used by the backend server group to receive requests from the load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>TCP</b> , <b>UDP</b> , <b>IP</b> , <b>TLS</b> , <b>HTTP</b> , <b>HTTPS</b> , <b>GRPC</b> , or <b>QUIC</b> .                                                                                                                                                                               |
| session_persistence | <b>SessionPersistence</b> object | <b>Definition:</b> Specifies the sticky session.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ip_version          | String                           | <b>Definition:</b> Specifies the IP address version supported by the backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• Shared load balancers: The value is fixed at <b>v4</b>.</li><li>• Dedicated load balancers: The value can be <b>dualstack</b> or <b>v4</b>. If the protocol of the backend server group is TCP or UDP, the value is <b>dualstack</b>. If the protocol of the backend server group is HTTP, the value is <b>v4</b>.</li></ul> |
| slow_start          | <b>SlowStart</b> object          | <b>Definition:</b> Specifies slow start details. After you enable slow start, new backend servers added to the backend server group are warmed up, and the number of requests they can receive increases linearly during the configured slow start duration.                                                                                                                                                                                                                     |

| Parameter                         | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_deletion_protection_enable | Boolean | <b>Definition:</b> Whether to enable removal protection for the backend server. Once the option is enabled, backend servers cannot be removed from the backend server group.<br><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).<br><b>NOTE</b><br>Disable deletion protection or removal protection for your resources before deregistering your account. |
| created_at                        | String  | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                                             |
| updated_at                        | String  | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                                               |
| vpc_id                            | String  | <b>Definition:</b> Specifies the ID of the VPC where the backend server group works.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                       |

| Parameter         | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type              | String  | <b>Definition:</b> Specifies the backend server group type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>instance:</b> Any type of backend servers can be added. <b>vpc_id</b> is mandatory.</li><li>• <b>ip:</b> Only IP as backend servers can be added. <b>vpc_id</b> cannot be specified. <b>type</b> cannot be set to <b>ip</b> if the backend server group protocol is <b>IP</b>.</li><li>• <b>"":</b> Any type of backend servers can be added.</li></ul> |
| protection_status | String  | <b>Definition:</b> Specifies the protection status.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul>                                                                                                                                                                                                                     |
| protection_reason | String  | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>).                                                                                                                                                                                                                                                                                                 |
| any_port_enable   | Boolean | <b>Definition:</b> Specifies whether to enable <b>any_port_enable</b> for a backend server group. If this option is enabled, the listener routes the requests to the backend server over the same port as the frontend port. If this option is disabled, the listener routes the requests over the port specified by <b>protocol_port</b> .<br><b>Range:</b> <b>true</b> (enable this option) or <b>false</b> (disable this option)                                             |



| Parameter              | Type                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| connection_drain       | <a href="#">ConnectionDrain</a> object     | <b>Definition:</b> Specifies the configurations of deregistration delay. This parameter is only available for TCP, UDP, and QUIC backend server groups and TCP and UDP listeners.<br><br>This parameter takes effect when: <ul style="list-style-type: none"><li>• A backend server is removed from a backend server group.</li><li>• A backend server is detected unhealthy or health checks fail.</li><li>• The weight of a backend server is 0.</li></ul> |
| enterprise_project_id  | String                                     | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul>                                                                                                                                                                            |
| pool_health            | <a href="#">PoolHealth</a> object          | <b>Definition:</b> Specifies the configurations of the pool health feature.                                                                                                                                                                                                                                                                                                                                                                                  |
| public_border_group    | String                                     | <b>Definition:</b> Specifies the public border group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>center:</b> public border group of the central site</li><li>• Edge site name: public border group of an edge site</li></ul>                                                                                                                                                                                                                |
| quic_cid_hash_strategy | <a href="#">QuicCidHashStrategy</a> object | <b>Definition:</b> Specifies multi-path distribution configuration based on destination connection IDs.                                                                                                                                                                                                                                                                                                                                                      |

**Table 5-452** AzAffinity

| Parameter | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <p><b>Definition:</b> Specifies whether to enable AZ affinity for the backend server group. If this parameter is set to <b>true</b>, ELB forwards traffic across the backend servers in the same AZ as the load balancer.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is available only for IP, TCP, and UDP backend server groups.</li><li>• This parameter is not available for backend server groups that are associated with TLS listeners.</li><li>• If the parameter is set to <b>true</b>, parameter <b>pool_health</b> will be ignored.</li></ul> <p><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).</p> <p><b>Default value:</b> N/A</p> |

| Parameter                            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_minimum_healthy_member_percentage | Integer | <p><b>Definition:</b> Specifies a percentage that is used to determine the health of an AZ. If the percentage of healthy servers in the AZ of the load balancer falls below the specified value, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>az_minimum_healthy_member_percentage</b> shows the percentage of backend servers that are healthy in a backend server group of an AZ. The number of healthy servers is rounded up. For example, in AZ A, if there are three backend servers in the backend server group and <b>az_minimum_healthy_member_percentage</b> is set to 66%, the number of healthy servers is rounded up to 2 (<math>3 \times 0.66 = 1.98</math>). If there are fewer than two healthy servers in AZ A, <b>az_unhealthy_fallback_strategy</b> is triggered. If <b>az_minimum_healthy_member_percentage</b> is set to 67%, the number of healthy servers is rounded up to 3 (<math>3 \times 0.67 = 2.01</math>). If there are fewer than three healthy servers in AZ A, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enable</b> is set to <b>true</b>, <b>az_minimum_healthy_member_percentage</b> and <b>az_minimum_healthy_member_count</b> cannot be set to -1 at the same time.</li><li>• If <b>enable</b> is set to <b>true</b>, either <b>az_minimum_healthy_member_percentage</b> or <b>az_minimum_healthy_member_count</b> must be set to -1.</li></ul> <p><b>Range:</b> an integer ranging from -1 to 100. An integer from 0 to 100 indicates the percentage of healthy servers in the AZ of the load balancer. -1 indicates that <b>az_minimum_healthy_member_count</b> takes effect.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                       | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_minimum_healthy_member_count | Integer | <p><b>Definition:</b> Specifies a number that is used to determine the health of an AZ. If the number of healthy servers in the AZ of the load balancer falls below the specified value, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>az_minimum_healthy_member_count</b> shows the number of healthy servers in a backend server group of an AZ.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enable</b> is set to <b>true</b>, <b>az_minimum_healthy_member_percentage</b> and <b>az_minimum_healthy_member_count</b> cannot be set to <b>-1</b> at the same time.</li><li>• If <b>enable</b> is set to <b>true</b>, either <b>az_minimum_healthy_member_percentage</b> or <b>az_minimum_healthy_member_count</b> must be set to <b>-1</b>.</li></ul> <p><b>Range:</b> an integer ranging from <b>-1</b> to <b>10000</b>. An integer from 0 to 10000 indicates the number of healthy servers in the AZ of the load balancer. <b>-1</b> indicates that <b>az_minimum_healthy_member_percentage</b> takes effect.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                       | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_unhealthy_fall_back_strategy | String | <p><b>Definition:</b> Specifies how traffic will be distributed across backend servers in an AZ if the percentage or number of healthy servers in the AZ of the load balancer falls below the specified value.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>forward_to_all_member_of_local_az:</b> forwards requests across all backend servers in the same AZ as the load balancer, even if some servers are unhealthy.</li><li>• <b>forward_to_healthy_member_of_remote_az:</b> forwards requests across healthy backend servers in different AZs from the load balancer.</li><li>• <b>forward_to_all_healthy_member:</b> forwards requests across healthy backend servers in all AZs.</li><li>• <b>forward_to_all_member:</b> forwards requests across all backend servers in all AZs, even if some servers are unhealthy.</li></ul> <p><b>Constraints:</b> N/A</p> <p><b>Default value:</b><br/><b>forward_to_all_member_of_local_az</b></p> |

**Table 5-453** ListenerRef

| Parameter | Type   | Description                                                                   |
|-----------|--------|-------------------------------------------------------------------------------|
| id        | String | <p><b>Definition:</b> Specifies the listener ID.</p> <p><b>Range:</b> N/A</p> |

**Table 5-454** LoadBalancerRef

| Parameter | Type   | Description                                                                        |
|-----------|--------|------------------------------------------------------------------------------------|
| id        | String | <p><b>Definition:</b> Specifies the load balancer ID.</p> <p><b>Range:</b> N/A</p> |

**Table 5-455** MemberRef

| Parameter | Type   | Description                                           |
|-----------|--------|-------------------------------------------------------|
| id        | String | Specifies the backend server ID.<br><b>Range:</b> N/A |

**Table 5-456** SessionPersistence

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cookie_name         | String  | <b>Definition:</b> Specifies the cookie name.<br><b>Range:</b> The value can contain a maximum of 1,024 characters.                                                                                                                                                                                                                                                                                                                                                                                                        |
| type                | String  | <b>Definition:</b> Specifies the sticky session type.<br><b>Range:</b> SOURCE_IP, HTTP_COOKIE, or APP_COOKIE.                                                                                                                                                                                                                                                                                                                                                                                                              |
| persistence_timeout | Integer | <b>Definition:</b> Specifies the stickiness duration, in minutes. This parameter will not take effect when <b>type</b> is set to APP_COOKIE.<br><b>Range:</b> <ul style="list-style-type: none"><li>If the protocol of the backend server group is TCP, UDP, or QUIC, the value ranges from <b>1</b> to <b>60</b>, and the default value is <b>1</b>.</li><li>If the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>, and the default value is <b>1440</b>.</li></ul> |

**Table 5-457** SlowStart

| Parameter | Type    | Description                                                                                                                                                                                                               |
|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable slow start.<br><b>Range:</b> <ul style="list-style-type: none"><li><b>true:</b> This option will be enabled.</li><li><b>false:</b> This option will be disabled.</li></ul> |
| duration  | Integer | <b>Definition:</b> Specifies the slow start duration, in seconds.<br><b>Range:</b> 30 to 1200                                                                                                                             |

**Table 5-458** ConnectionDrain

| Parameter | Type    | Description                                                                                                                                                                                                                                |
|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable <b>connection_drain</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A |
| timeout   | Integer | <b>Definition:</b> Specifies the deregistration delay timeout, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> 10 to 4000<br><b>Constraints:</b> N/A                                                                               |

**Table 5-459** PoolHealth

| Parameter                    | Type    | Description                                                                                                                                                                                                                                                                                                              |
|------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| minimum_healthy_member_count | Integer | <b>Definition:</b> Specifies the number of healthy backend servers below which the backend server group is considered as unhealthy.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0</b> (default): <b>pool_health</b> does not take effect.</li><li>• <b>1</b>: <b>pool_health</b> takes effect.</li></ul> |

**Table 5-460** QuicCidHashStrategy

| Parameter | Type    | Description                                                                                                                                                                                                                                     |
|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| len       | Integer | <b>Definition:</b> Specifies the length of the hash factor in the connection ID.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 1 to 20<br><b>Default value:</b> 3 |

| Parameter | Type    | Description                                                                                                                                                                                                                                             |
|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| offset    | Integer | <b>Definition:</b> Specifies the start position in the connection ID as the hash factor.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 0 to 19<br><b>Default value:</b> 1 |

## Example Requests

- Creating a backend server group and setting its backend protocol to TCP

POST https://{ELB\_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools

```
{
 "pool" : {
 "name" : "My pool",
 "lb_algorithm" : "LEAST_CONNECTIONS",
 "listener_id" : "0b11747a-b139-492f-9692-2df0b1c87193",
 "protocol" : "TCP",
 "member_deletion_protection_enable" : false
 }
}
```

- Creating a backend server group and setting its backend protocol to HTTP

POST https://{ELB\_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools

```
{
 "pool" : {
 "name" : "My pool",
 "lb_algorithm" : "LEAST_CONNECTIONS",
 "listener_id" : "0b11747a-b139-492f-9692-2df0b1c87193",
 "protocol" : "HTTP",
 "slow_start" : {
 "enable" : true,
 "duration" : 50
 },
 "member_deletion_protection_enable" : false
 }
}
```

## Example Responses

**Status code: 201**

Successful request.

```
{
 "pool" : {
 "name" : "my pool",
 "id" : "00ed68a5-8784-424e-8936-8dbb7a9d41e9",
 "description" : "",
 "lb_algorithm" : "ROUND_ROBIN",
 "protocol" : "TCP",
 "admin_state_up" : true,
 "loadbalancers" : [],
 "type" : "instance",
 "project_id" : "0c1503d710984bad92306faea3654dfd",
 }
}
```



```
"enterprise_project_id" : "0",
"session_persistence" : null,
"slow_start" : null,
"healthmonitor_id" : "a5f47d4c-1187-402f-849c-c0a7767e36f5",
"listeners" : [],
"members" : [{
 "id" : "87b1130c-80dc-493d-b98a-add98ea4c6a2"
}],
"ip_version" : "dualstack",
"member_deletion_protection_enable" : false,
"created_at" : "2024-08-19T17:49:53Z",
"updated_at" : "2024-09-09T09:21:05Z",
"protection_status" : "nonProtection",
"protection_reason" : "",
"vpc_id" : "651594cf-18a0-4a77-942f-1a4ae216c123",
"connection_drain" : {
 "enable" : true,
 "timeout" : 300
},
"pool_health" : {
 "minimum_healthy_member_count" : 0
},
"az_affinity" : {
 "enable" : true,
 "az_minimum_healthy_member_percentage" : -1,
 "az_minimum_healthy_member_count" : 1,
 "az_unhealthy_fallback_strategy" : "forward_to_all_member_of_local_az"
},
"quic_cid_hash_strategy" : null,
"public_border_group" : "center",
"any_port_enable" : false
},
"request_id" : "2d974978-0733-404d-a21a-b29204f4803a"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

- Creating a backend server group and setting its backend protocol to TCP

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CreatePoolSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";
```

```
ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
CreatePoolRequest request = new CreatePoolRequest();
CreatePoolRequestBody body = new CreatePoolRequestBody();
CreatePoolOption poolbody = new CreatePoolOption();
poolbody.withLbAlgorithm("LEAST_CONNECTIONS")
 .withListenerId("0b11747a-b139-492f-9692-2df0b1c87193")
 .withName("My pool")
 .withProtocol("TCP")
 .withMemberDeletionProtectionEnable(false);
body.withPool(poolbody);
request.withBody(body);
try {
 CreatePoolResponse response = client.createPool(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

- Creating a backend server group and setting its backend protocol to HTTP

```
package com.huaweicloud.sdk.test;
```

```
import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;
```

```
public class CreatePoolSolution {
```

```
 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 environment
```

```
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";
```

```
 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);
```

```
 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
```

```
.build();
CreatePoolRequest request = new CreatePoolRequest();
CreatePoolRequestBody body = new CreatePoolRequestBody();
CreatePoolSlowStartOption slowStartPool = new CreatePoolSlowStartOption();
slowStartPool.withEnable(true)
 .withDuration(50);
CreatePoolOption poolbody = new CreatePoolOption();
poolbody.withLbAlgorithm("LEAST_CONNECTIONS")
 .withListenerId("0b11747a-b139-492f-9692-2df0b1c87193")
 .withName("My pool")
 .withProtocol("HTTP")
 .withSlowStart(slowStartPool)
 .withMemberDeletionProtectionEnable(false);
body.withPool(poolbody);
request.withBody(body);
try {
 CreatePoolResponse response = client.createPool(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrMsg());
}
}
```

- Creating an IP backend server group for a gateway load balancer

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CreatePoolSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 CreatePoolRequest request = new CreatePoolRequest();
 CreatePoolRequestBody body = new CreatePoolRequestBody();
 CreatePoolOption poolbody = new CreatePoolOption();
```

```
poolbody.withLbAlgorithm("2_tuple_hash")
 .withListenerId("0b11747a-b139-492f-9692-2df0b1c87193")
 .withName("My IP pool")
 .withProtocol("IP")
 .withMemberDeletionProtectionEnable(false)
 .withType("instance");
body.withPool(poolbody);
request.withBody(body);
try {
 CreatePoolResponse response = client.createPool(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

- Creating a backend server group and setting its backend protocol to TCP

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreatePoolRequest()
 poolbody = CreatePoolOption(
 lb_algorithm="LEAST_CONNECTIONS",
 listener_id="0b11747a-b139-492f-9692-2df0b1c87193",
 name="My pool",
 protocol="TCP",
 member_deletion_protection_enable=False
)
 request.body = CreatePoolRequestBody(
 pool=poolbody
)
 response = client.create_pool(request)
 print(response)
 except exceptions.ClientRequestException as e:
```

```
print(e.status_code)
print(e.request_id)
print(e.error_code)
print(e.error_msg)
```

- Creating a backend server group and setting its backend protocol to HTTP

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreatePoolRequest()
 slowStartPool = CreatePoolSlowStartOption(
 enable=True,
 duration=50
)
 poolbody = CreatePoolOption(
 lb_algorithm="LEAST_CONNECTIONS",
 listener_id="0b11747a-b139-492f-9692-2df0b1c87193",
 name="My pool",
 protocol="HTTP",
 slow_start=slowStartPool,
 member_deletion_protection_enable=False
)
 request.body = CreatePoolRequestBody(
 pool=poolbody
)
 response = client.create_pool(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

- Creating an IP backend server group for a gateway load balancer

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
```

```
In this example, AK and SK are stored in environment variables for authentication. Before
running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
environment
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

try:
 request = CreatePoolRequest()
 poolbody = CreatePoolOption(
 lb_algorithm="2_tuple_hash",
 listener_id="0b11747a-b139-492f-9692-2df0b1c87193",
 name="My IP pool",
 protocol="IP",
 member_deletion_protection_enable=False,
 type="instance"
)
 request.body = CreatePoolRequestBody(
 pool=poolbody
)
 response = client.create_pool(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

- Creating a backend server group and setting its backend protocol to TCP

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
```

```
Build()

request := &model.CreatePoolRequest{}
listenerIdPool:= "0b11747a-b139-492f-9692-2df0b1c87193"
namePool:= "My pool"
memberDeletionProtectionEnablePool:= false
poolbody := &model.CreatePoolOption{
 LbAlgorithm: "LEAST_CONNECTIONS",
 ListenerId: &listenerIdPool,
 Name: &namePool,
 Protocol: "TCP",
 MemberDeletionProtectionEnable: &memberDeletionProtectionEnablePool,
}
request.Body = &model.CreatePoolRequestBody{
 Pool: poolbody,
}
response, err := client.CreatePool(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

- Creating a backend server group and setting its backend protocol to HTTP

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.CreatePoolRequest{}
 enableSlowStart:= true
 durationSlowStart:= int32(50)
 slowStartPool := &model.CreatePoolSlowStartOption{
 Enable: &enableSlowStart,
 Duration: &durationSlowStart,
 }
 listenerIdPool:= "0b11747a-b139-492f-9692-2df0b1c87193"
 namePool:= "My pool"
 memberDeletionProtectionEnablePool:= false
 poolbody := &model.CreatePoolOption{
 LbAlgorithm: "LEAST_CONNECTIONS",
```

```
 ListenerId: &listenerIdPool,
 Name: &namePool,
 Protocol: "HTTP",
 SlowStart: slowStartPool,
 MemberDeletionProtectionEnable: &memberDeletionProtectionEnablePool,
 }
 request.Body = &model.CreatePoolRequestBody{
 Pool: poolbody,
 }
 response, err := client.CreatePool(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

- Creating an IP backend server group for a gateway load balancer

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.CreatePoolRequest{}
 listenerIdPool := "0b11747a-b139-492f-9692-2df0b1c87193"
 namePool := "My IP pool"
 memberDeletionProtectionEnablePool := false
 typePool := "instance"
 poolbody := &model.CreatePoolOption{
 LbAlgorithm: "2_tuple_hash",
 ListenerId: &listenerIdPool,
 Name: &namePool,
 Protocol: "IP",
 MemberDeletionProtectionEnable: &memberDeletionProtectionEnablePool,
 Type: &typePool,
 }
 request.Body = &model.CreatePoolRequestBody{
 Pool: poolbody,
 }
 response, err := client.CreatePool(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 }
}
```



```
} else {
 fmt.Println(err)
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 201         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.11.2 Querying Backend Server Groups

### Function

This API is used to query all backend server groups.

### Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query.
- Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/pools

**Table 5-461** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

**Table 5-462** Query Parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker    | No        | String  | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| limit     | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000                                                                                                                                                                                                                                                                  |

| Parameter      | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse   | No        | Boolean          | <p><b>Definition:</b> Specifies whether to use reverse query.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>true:</b> Query resources on the previous page.</li><li>• <b>false:</b> Query resources on the next page.</li></ul> <p><b>Default value:</b> false</p> |
| description    | No        | Array of strings | <p><b>Definition:</b> Specifies supplementary information about the backend server group.</p> <p>Multiple descriptions can be used for query in the format of <i>description=xxx&amp;description=xx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                 |
| admin_state_up | No        | Boolean          | <p><b>Definition:</b> Specifies the administrative status of the backend server group.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Parameter        | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                          |
|------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| healthmonitor_id | No        | Array of strings | <b>Definition:</b> Specifies the ID of the health check configured for the backend server group.<br>Multiple IDs can be used for query in the format of <i>healthmonitor_id=xxx&amp;healthmonitor_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A          |
| id               | No        | Array of strings | <b>Definition:</b> Specifies the ID of the backend server group.<br>Multiple IDs can be used for query in the format of <i>id=xxx&amp;id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                      |
| name             | No        | Array of strings | <b>Definition:</b> Specifies the backend server group name.<br>Multiple names can be used for query in the format of <i>name=xxx&amp;name=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                     |
| loadbalancer_id  | No        | Array of strings | <b>Definition:</b> Specifies the ID of the load balancer with which the backend server group is associated.<br>Multiple IDs can be used for query in the format of <i>loadbalancer_id=xxx&amp;loadbalancer_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter    | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol     | No        | Array of strings | <p><b>Definition:</b> Specifies the protocol used by the backend server group to receive requests from the load balancer.</p> <p>Multiple protocols can be used for query in the format of <i>protocol=xxx&amp;protocol=xxx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> The value can be <b>TCP</b>, <b>UDP</b>, <b>IP</b>, <b>TLS</b>, <b>HTTP</b>, <b>HTTPS</b>, <b>GRPC</b>, or <b>QUIC</b>.</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| lb_algorithm | No        | Array of strings | <p><b>Definition:</b> Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.</p> <p>Multiple algorithms can be used for query in the format of <i>lb_algorithm=xxx&amp;lb_algorithm=xxx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN:</b> weighted round robin</li><li>• <b>LEAST_CONNECTIONS:</b> weighted least connections</li><li>• <b>SOURCE_IP:</b> source IP hash</li><li>• <b>QUIC_CID:</b> connection ID</li><li>• <b>2_TUPLE_HASH:</b> 2-tuple hash that is only available for IP backend server groups</li><li>• <b>3_TUPLE_HASH:</b> 3-tuple hash that is only available for IP backend server groups</li><li>• <b>5_TUPLE_HASH:</b> 5-tuple hash that is only available for IP backend server groups</li></ul> <p><b>Default value:</b> N/A</p> |

| Parameter             | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | Array of strings | <p><b>Definition:</b> Specifies the ID of the enterprise project.</p> <p>Multiple values can be used for query in the format of: <i>enterprise_project_id=xxx&amp;enterprise_project_id=xxx</i>.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enterprise_project_id</b> is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:poools:list</b> permission must be assigned to the user group.</li><li>• If <b>enterprise_project_id</b> is specified, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:poools:list</b> permission are queried.</li></ul> <p><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p> |
| ip_version            | No        | Array of strings | <p><b>Definition:</b> Specifies the IP address version supported by the backend server group.</p> <p>Multiple versions can be used for query in the format of <i>ip_version=xxx&amp;ip_version=xxx</i>.</p> <p><b>Constraints:</b> N/A<br/><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Parameter                         | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_address                    | No        | Array of strings | <b>Definition:</b> Specifies the IP address of the backend server. This is a query parameter and will not be included in the response.<br><br>Multiple IP addresses can be used for query in the format of<br><i>member_address=xxx&amp;member_address=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                       |
| member_device_id                  | No        | Array of strings | <b>Definition:</b> Specifies the ID of the ECS that is associated with the load balancer as a backend server. This is a query parameter and will not be included in the response.<br><br>Multiple IDs can be used for query in the format of<br><i>member_device_id=xxx&amp;member_device_id=xxx.</i><br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| member_deletion_protection_enable | No        | Boolean          | <b>Definition:</b> Specifies whether to enable deletion protection.<br><b>Constraints:</b> N/A<br><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option). All resources will be queried if this parameter is not passed.<br><b>Default value:</b> N/A                                                                                                |

| Parameter          | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------|-----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listener_id        | No        | Array of strings | <b>Definition:</b> Specifies the IDs of the associated listeners, including the listeners associated through forwarding policies.<br>Multiple IDs can be used for query in the format of <i>listener_id=xxx&amp;listener_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                |
| member_instance_id | No        | Array of strings | <b>Definition:</b> Specifies the backend server ID. This is a query parameter and will not be included in the response.<br>Multiple IDs can be used for query in the format of <i>member_instance_id=xxx&amp;member_instance_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                            |
| vpc_id             | No        | Array of strings | <b>Definition:</b> Specifies the ID of the VPC where the backend server group works.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                 |
| type               | No        | Array of strings | <b>Definition:</b> Specifies the type of the backend server group.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>instance:</b> Any type of backend servers can be added. <b>vpc_id</b> is mandatory.</li><li>• <b>ip:</b> Only IP as backend servers can be added. <b>vpc_id</b> cannot be specified.</li><li>• <b>"":</b> Any type of backend servers can be added.</li></ul> <b>Default value:</b> N/A |



| Parameter         | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                    |
|-------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_status | No        | Array of strings | <b>Definition:</b> Specifies the protection status.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul> <b>Default value:</b> N/A                               |
| connection_drain  | No        | Boolean          | <b>Definition:</b> Specifies a <b>connection_drain</b> value for query, in the format of <b>connection_drain=true</b> or <b>connection_drain=false</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                          |
| pool_health       | No        | String           | <b>Definition:</b> Specifies a <b>pool_health</b> value for query, in the format of <b>minimum_healthy_member_count=0</b> or <b>minimum_healthy_member_count=1</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                              |
| any_port_enable   | No        | Boolean          | <b>Definition:</b> Specifies whether <b>any_port_enable</b> is enabled. If this option is enabled, the listener routes the requests to the backend server over the same port as the frontend port.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enabled) or <b>false</b> (disabled).<br><b>Default value:</b> N/A |

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| public_border_group | No        | String  | <b>Definition:</b> Specifies the public border group.<br>Multiple public border groups can be queried in the format of<br><i>public_border_group=xxx&amp;public_border_group=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>center:</b> public border group of the central site</li><li>• Edge site name: public border group of an edge site</li></ul> <b>Default value:</b> N/A |
| quic_cid_len        | No        | Integer | <b>Definition:</b> Specifies the QUIC connection ID that is used to query backend server groups. It is used only as a query condition but not as a response parameter.<br>Multiple values can be used for query in the format of<br><i>quic_cid_len=3&amp;quic_cid_len=5</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                         |
| quic_cid_offset     | No        | Integer | <b>Definition:</b> Specifies the QUIC connection ID offset that is used to query backend server groups. It is used only as a query condition but not as a response parameter.<br>Multiple values can be used for query in the format of<br><i>quic_cid_offset=1&amp;quic_cid_offset=3</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                            |

| Parameter   | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                           |
|-------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_affinity | No        | Array of strings | <b>Definition:</b> Specifies whether AZ affinity of a backend server group is enabled. The following is an example:<br>"az_affinity": {<br>"enable": "true"<br>}<br>Multiple values can be used for query in the format of <i>az_affinity=enable=true&amp;az_affinity=enable=false</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-463** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-464** Response body parameters

| Parameter  | Type                            | Description                                                                                                                                                                          |
|------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                          | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| page_info  | <a href="#">PageInfo</a> object | <b>Definition:</b> Specifies the pagination information.                                                                                                                             |

| Parameter | Type                                  | Description                                         |
|-----------|---------------------------------------|-----------------------------------------------------|
| pools     | Array of <a href="#">Pool</a> objects | <b>Definition:</b> Lists the backend server groups. |

**Table 5-465** PageInfo

| Parameter       | Type    | Description                                                                                                                                                                                                                          |
|-----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String  | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |
| next_marker     | String  | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A                                                                  |
| current_count   | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A                                                                                                                                |

**Table 5-466** Pool

| Parameter        | Type                              | Description                                                                                                                                                    |
|------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up   | Boolean                           | <b>Definition:</b> Specifies the administrative status of the backend server group. The value can only be <b>true</b> .<br><b>Range:</b> <b>true</b> (enabled) |
| az_affinity      | <a href="#">AzAffinity</a> object | <b>Definition:</b> Specifies how AZ affinity is configured for the backend server group.                                                                       |
| description      | String                            | <b>Definition:</b> Provides supplementary information about the backend server group.<br><b>Range:</b> N/A                                                     |
| healthmonitor_id | String                            | <b>Definition:</b> Specifies the ID of the health check configured for the backend server group.<br><b>Range:</b> N/A                                          |

| Parameter     | Type                                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id            | String                                           | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| lb_algorithm  | String                                           | <b>Definition:</b> Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN:</b> weighted round robin</li><li>• <b>LEAST_CONNECTIONS:</b> weighted least connections</li><li>• <b>SOURCE_IP:</b> source IP hash</li><li>• <b>QUIC_CID:</b> connection ID</li><li>• <b>2_TUPLE_HASH:</b> 2-tuple hash that is only available for IP backend server groups</li><li>• <b>3_TUPLE_HASH:</b> 3-tuple hash that is only available for IP backend server groups</li><li>• <b>5_TUPLE_HASH:</b> 5-tuple hash that is only available for IP backend server groups</li><li>• If this parameter is not specified for an IP backend server group, <b>5_TUPLE_HASH</b> is used by default.</li></ul> |
| listeners     | Array of <a href="#">ListenerRef</a> objects     | <b>Definition:</b> Specifies the IDs of the listeners with which the backend server group is associated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| loadbalancers | Array of <a href="#">LoadBalancerRef</a> objects | <b>Definition:</b> Specifies the IDs of the load balancers with which the backend server group is associated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| members       | Array of <a href="#">MemberRef</a> objects       | <b>Definition:</b> Specifies the IDs of backend servers in the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| name          | String                                           | <b>Definition:</b> Specifies the backend server group name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| project_id    | String                                           | <b>Definition:</b> Specifies the project ID of the backend server group.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Parameter                         | Type                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol                          | String                           | <b>Definition:</b> Specifies the protocol used by the backend server group to receive requests from the load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>TCP</b> , <b>UDP</b> , <b>IP</b> , <b>TLS</b> , <b>HTTP</b> , <b>HTTPS</b> , <b>GRPC</b> , or <b>QUIC</b> .                                                                                                                                                                               |
| session_persistence               | <b>SessionPersistence</b> object | <b>Definition:</b> Specifies the sticky session.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ip_version                        | String                           | <b>Definition:</b> Specifies the IP address version supported by the backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• Shared load balancers: The value is fixed at <b>v4</b>.</li><li>• Dedicated load balancers: The value can be <b>dualstack</b> or <b>v4</b>. If the protocol of the backend server group is TCP or UDP, the value is <b>dualstack</b>. If the protocol of the backend server group is HTTP, the value is <b>v4</b>.</li></ul> |
| slow_start                        | <b>SlowStart</b> object          | <b>Definition:</b> Specifies slow start details. After you enable slow start, new backend servers added to the backend server group are warmed up, and the number of requests they can receive increases linearly during the configured slow start duration.                                                                                                                                                                                                                     |
| member_deletion_protection_enable | Boolean                          | <b>Definition:</b> Whether to enable removal protection for the backend server. Once the option is enabled, backend servers cannot be removed from the backend server group.<br><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).<br><b>NOTE</b><br>Disable deletion protection or removal protection for your resources before deregistering your account.                                                                                  |

| Parameter         | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| created_at        | String | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br><b>Note:</b> This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                                                                                                                      |
| updated_at        | String | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br><b>Note:</b> This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                                                                                                                        |
| vpc_id            | String | <b>Definition:</b> Specifies the ID of the VPC where the backend server group works.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                       |
| type              | String | <b>Definition:</b> Specifies the backend server group type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>instance:</b> Any type of backend servers can be added. <b>vpc_id</b> is mandatory.</li><li>• <b>ip:</b> Only IP as backend servers can be added. <b>vpc_id</b> cannot be specified. <b>type</b> cannot be set to <b>ip</b> if the backend server group protocol is <b>IP</b>.</li><li>• <b>"":</b> Any type of backend servers can be added.</li></ul> |
| protection_status | String | <b>Definition:</b> Specifies the protection status.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul>                                                                                                                                                                                                                     |

| Parameter             | Type                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_reason     | String                        | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>).                                                                                                                                                                                                                                                                          |
| any_port_enable       | Boolean                       | <b>Definition:</b> Specifies whether to enable <b>any_port_enable</b> for a backend server group. If this option is enabled, the listener routes the requests to the backend server over the same port as the frontend port. If this option is disabled, the listener routes the requests over the port specified by <b>protocol_port</b> .<br><b>Range:</b> <b>true</b> (enable this option) or <b>false</b> (disable this option)                      |
| connection_drain      | <b>ConnectionDrain</b> object | <b>Definition:</b> Specifies the configurations of deregistration delay. This parameter is only available for TCP, UDP, and QUIC backend server groups and TCP and UDP listeners.<br>This parameter takes effect when: <ul style="list-style-type: none"><li>• A backend server is removed from a backend server group.</li><li>• A backend server is detected unhealthy or health checks fail.</li><li>• The weight of a backend server is 0.</li></ul> |
| enterprise_project_id | String                        | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul>                                                                                                                                                                        |
| pool_health           | <b>PoolHealth</b> object      | <b>Definition:</b> Specifies the configurations of the pool health feature.                                                                                                                                                                                                                                                                                                                                                                              |
| public_border_group   | String                        | <b>Definition:</b> Specifies the public border group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>center:</b> public border group of the central site</li><li>• Edge site name: public border group of an edge site</li></ul>                                                                                                                                                                                                            |



| Parameter              | Type                              | Description                                                                                             |
|------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------------|
| quic_cid_hash_strategy | <b>QuicCidHashStrategy</b> object | <b>Definition:</b> Specifies multi-path distribution configuration based on destination connection IDs. |

Table 5-467 AzAffinity

| Parameter | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <p><b>Definition:</b> Specifies whether to enable AZ affinity for the backend server group. If this parameter is set to <b>true</b>, ELB forwards traffic across the backend servers in the same AZ as the load balancer.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is available only for IP, TCP, and UDP backend server groups.</li><li>• This parameter is not available for backend server groups that are associated with TLS listeners.</li><li>• If the parameter is set to <b>true</b>, parameter <b>pool_health</b> will be ignored.</li></ul> <p><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).</p> <p><b>Default value:</b> N/A</p> |

| Parameter                            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_minimum_healthy_member_percentage | Integer | <p><b>Definition:</b> Specifies a percentage that is used to determine the health of an AZ. If the percentage of healthy servers in the AZ of the load balancer falls below the specified value, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>az_minimum_healthy_member_percentage</b> shows the percentage of backend servers that are healthy in a backend server group of an AZ. The number of healthy servers is rounded up. For example, in AZ A, if there are three backend servers in the backend server group and <b>az_minimum_healthy_member_percentage</b> is set to 66%, the number of healthy servers is rounded up to 2 (<math>3 \times 0.66 = 1.98</math>). If there are fewer than two healthy servers in AZ A, <b>az_unhealthy_fallback_strategy</b> is triggered. If <b>az_minimum_healthy_member_percentage</b> is set to 67%, the number of healthy servers is rounded up to 3 (<math>3 \times 0.67 = 2.01</math>). If there are fewer than three healthy servers in AZ A, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enable</b> is set to <b>true</b>, <b>az_minimum_healthy_member_percentage</b> and <b>az_minimum_healthy_member_count</b> cannot be set to -1 at the same time.</li><li>• If <b>enable</b> is set to <b>true</b>, either <b>az_minimum_healthy_member_percentage</b> or <b>az_minimum_healthy_member_count</b> must be set to -1.</li></ul> <p><b>Range:</b> an integer ranging from -1 to 100. An integer from 0 to 100 indicates the percentage of healthy servers in the AZ of the load balancer. -1 indicates that <b>az_minimum_healthy_member_count</b> takes effect.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                       | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_minimum_healthy_member_count | Integer | <p><b>Definition:</b> Specifies a number that is used to determine the health of an AZ. If the number of healthy servers in the AZ of the load balancer falls below the specified value, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>az_minimum_healthy_member_count</b> shows the number of healthy servers in a backend server group of an AZ.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enable</b> is set to <b>true</b>, <b>az_minimum_healthy_member_percentage</b> and <b>az_minimum_healthy_member_count</b> cannot be set to <b>-1</b> at the same time.</li><li>• If <b>enable</b> is set to <b>true</b>, either <b>az_minimum_healthy_member_percentage</b> or <b>az_minimum_healthy_member_count</b> must be set to <b>-1</b>.</li></ul> <p><b>Range:</b> an integer ranging from <b>-1</b> to <b>10000</b>. An integer from 0 to 10000 indicates the number of healthy servers in the AZ of the load balancer. <b>-1</b> indicates that <b>az_minimum_healthy_member_percentage</b> takes effect.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                       | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_unhealthy_fall_back_strategy | String | <p><b>Definition:</b> Specifies how traffic will be distributed across backend servers in an AZ if the percentage or number of healthy servers in the AZ of the load balancer falls below the specified value.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>forward_to_all_member_of_local_az:</b> forwards requests across all backend servers in the same AZ as the load balancer, even if some servers are unhealthy.</li><li>• <b>forward_to_healthy_member_of_remote_az:</b> forwards requests across healthy backend servers in different AZs from the load balancer.</li><li>• <b>forward_to_all_healthy_member:</b> forwards requests across healthy backend servers in all AZs.</li><li>• <b>forward_to_all_member:</b> forwards requests across all backend servers in all AZs, even if some servers are unhealthy.</li></ul> <p><b>Constraints:</b> N/A</p> <p><b>Default value:</b><br/><b>forward_to_all_member_of_local_az</b></p> |

**Table 5-468** ListenerRef

| Parameter | Type   | Description                                                                   |
|-----------|--------|-------------------------------------------------------------------------------|
| id        | String | <p><b>Definition:</b> Specifies the listener ID.</p> <p><b>Range:</b> N/A</p> |

**Table 5-469** LoadBalancerRef

| Parameter | Type   | Description                                                                        |
|-----------|--------|------------------------------------------------------------------------------------|
| id        | String | <p><b>Definition:</b> Specifies the load balancer ID.</p> <p><b>Range:</b> N/A</p> |

**Table 5-470** MemberRef

| Parameter | Type   | Description                                           |
|-----------|--------|-------------------------------------------------------|
| id        | String | Specifies the backend server ID.<br><b>Range:</b> N/A |

**Table 5-471** SessionPersistence

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cookie_name         | String  | <b>Definition:</b> Specifies the cookie name.<br><b>Range:</b> The value can contain a maximum of 1,024 characters.                                                                                                                                                                                                                                                                                                                                                                                                        |
| type                | String  | <b>Definition:</b> Specifies the sticky session type.<br><b>Range:</b> SOURCE_IP, HTTP_COOKIE, or APP_COOKIE.                                                                                                                                                                                                                                                                                                                                                                                                              |
| persistence_timeout | Integer | <b>Definition:</b> Specifies the stickiness duration, in minutes. This parameter will not take effect when <b>type</b> is set to APP_COOKIE.<br><b>Range:</b> <ul style="list-style-type: none"><li>If the protocol of the backend server group is TCP, UDP, or QUIC, the value ranges from <b>1</b> to <b>60</b>, and the default value is <b>1</b>.</li><li>If the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>, and the default value is <b>1440</b>.</li></ul> |

**Table 5-472** SlowStart

| Parameter | Type    | Description                                                                                                                                                                                                               |
|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable slow start.<br><b>Range:</b> <ul style="list-style-type: none"><li><b>true:</b> This option will be enabled.</li><li><b>false:</b> This option will be disabled.</li></ul> |
| duration  | Integer | <b>Definition:</b> Specifies the slow start duration, in seconds.<br><b>Range:</b> 30 to 1200                                                                                                                             |

**Table 5-473** ConnectionDrain

| Parameter | Type    | Description                                                                                                                                                                                                                                |
|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable <b>connection_drain</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A |
| timeout   | Integer | <b>Definition:</b> Specifies the deregistration delay timeout, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> 10 to 4000<br><b>Constraints:</b> N/A                                                                               |

**Table 5-474** PoolHealth

| Parameter                    | Type    | Description                                                                                                                                                                                                                                                                                                              |
|------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| minimum_healthy_member_count | Integer | <b>Definition:</b> Specifies the number of healthy backend servers below which the backend server group is considered as unhealthy.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0</b> (default): <b>pool_health</b> does not take effect.</li><li>• <b>1</b>: <b>pool_health</b> takes effect.</li></ul> |

**Table 5-475** QuicCidHashStrategy

| Parameter | Type    | Description                                                                                                                                                                                                                                     |
|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| len       | Integer | <b>Definition:</b> Specifies the length of the hash factor in the connection ID.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 1 to 20<br><b>Default value:</b> 3 |

| Parameter | Type    | Description                                                                                                                                                                                                                                             |
|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| offset    | Integer | <b>Definition:</b> Specifies the start position in the connection ID as the hash factor.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 0 to 19<br><b>Default value:</b> 1 |

## Example Requests

Querying backend server groups

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools?limit=2
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "request_id": "cc07698a1f12dd65c7d70bf1c56e62e8",
 "pools": [{
 "name": "server_group-0149",
 "id": "00ed68a5-8784-424e-8936-8dbb7a9d41e9",
 "description": "",
 "lb_algorithm": "ROUND_ROBIN",
 "protocol": "TCP",
 "admin_state_up": true,
 "loadbalancers": [],
 "type": "instance",
 "project_id": "0c1503d710984bad92306faea3654dfd",
 "enterprise_project_id": "0",
 "session_persistence": null,
 "slow_start": null,
 "healthmonitor_id": "a5f47d4c-1187-402f-849c-c0a7767e36f5",
 "listeners": [],
 "members": [{
 "id": "87b1130c-80dc-493d-b98a-add98ea4c6a2"
 }],
 "ip_version": "dualstack",
 "member_deletion_protection_enable": false,
 "created_at": "2024-08-19T17:49:53Z",
 "updated_at": "2024-09-09T09:21:05Z",
 "protection_status": "nonProtection",
 "protection_reason": "",
 "vpc_id": "651594cf-18a0-4a77-942f-1a4ae216c123",
 "connection_drain": {
 "enable": true,
 "timeout": 300
 },
 "pool_health": {
 "minimum_healthy_member_count": 0
 },
 "az_affinity": {
 "enable": true,
 "az_minimum_healthy_member_percentage": -1,
 "az_minimum_healthy_member_count": 1,

```

```
 "az_unhealthy_fallback_strategy" : "forward_to_all_member_of_local_az"
 },
 "quic_cid_hash_strategy" : null,
 "public_border_group" : "center",
 "any_port_enable" : false
}, {
 "name" : "server_group-9930-jpp",
 "id" : "0149afd9-18b8-444f-ae7c-87f1b0ddacde",
 "description" : "",
 "lb_algorithm" : "ROUND_ROBIN",
 "protocol" : "HTTP",
 "admin_state_up" : true,
 "loadbalancers" : [],
 "type" : "instance",
 "project_id" : "0c1503d710984bad92306faea3654dfd",
 "enterprise_project_id" : "0",
 "session_persistence" : null,
 "slow_start" : {
 "enable" : false,
 "duration" : 30
 },
 "healthmonitor_id" : "9e48250b-4e2a-402a-bc3d-e0c431e82d63",
 "listeners" : [],
 "members" : [{
 "id" : "bd1500d4-a06d-47d9-bed7-2454b716f63e"
 }],
 "ip_version" : "v4",
 "member_deletion_protection_enable" : false,
 "created_at" : "2024-04-29T08:21:47Z",
 "updated_at" : "2024-07-23T03:41:03Z",
 "protection_status" : "nonProtection",
 "protection_reason" : "",
 "vpc_id" : "60cb5110-771b-4459-89cd-becb303263fc",
 "connection_drain" : null,
 "pool_health" : {
 "minimum_healthy_member_count" : 0
 },
 "az_affinity" : null,
 "quic_cid_hash_strategy" : null,
 "public_border_group" : "center",
 "any_port_enable" : false
}],
"page_info" : {
 "next_marker" : "0149afd9-18b8-444f-ae7c-87f1b0ddacde",
 "previous_marker" : "00ed68a5-8784-424e-8936-8dbb7a9d41e9",
 "current_count" : 2
}
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListPoolsSolution {
```



```
public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ListPoolsRequest request = new ListPoolsRequest();
 try {
 ListPoolsResponse response = client.listPools(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.getenv("CLOUD_SDK_AK")
 sk = os.getenv("CLOUD_SDK_SK")
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ListPoolsRequest()
 response = client.list_pools(request)
 print(response)
```

```
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ListPoolsRequest{}
 response, err := client.ListPools(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

Error Codes

See [Error Codes](#).

5.11.3 Querying the Details of a Backend Server Group

Function

This API is used to view the details of a backend server group.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v3/{project\_id}/elb/pools/{pool\_id}

Table 5-476 Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| pool_id    | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                     |

## Request Parameters

**Table 5-477** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-478** Response body parameters

| Parameter  | Type               | Description                                                                                                                                                                          |
|------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String             | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| pool       | <b>Pool</b> object | <b>Definition:</b> Specifies the backend server group.                                                                                                                               |

**Table 5-479** Pool

| Parameter      | Type                     | Description                                                                                                                                                    |
|----------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean                  | <b>Definition:</b> Specifies the administrative status of the backend server group. The value can only be <b>true</b> .<br><b>Range:</b> <b>true</b> (enabled) |
| az_affinity    | <b>AzAffinity</b> object | <b>Definition:</b> Specifies how AZ affinity is configured for the backend server group.                                                                       |
| description    | String                   | <b>Definition:</b> Provides supplementary information about the backend server group.<br><b>Range:</b> N/A                                                     |

| Parameter        | Type                                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| healthmonitor_id | String                                           | <b>Definition:</b> Specifies the ID of the health check configured for the backend server group.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| id               | String                                           | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| lb_algorithm     | String                                           | <b>Definition:</b> Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN:</b> weighted round robin</li><li>• <b>LEAST_CONNECTIONS:</b> weighted least connections</li><li>• <b>SOURCE_IP:</b> source IP hash</li><li>• <b>QUIC_CID:</b> connection ID</li><li>• <b>2_TUPLE_HASH:</b> 2-tuple hash that is only available for IP backend server groups</li><li>• <b>3_TUPLE_HASH:</b> 3-tuple hash that is only available for IP backend server groups</li><li>• <b>5_TUPLE_HASH:</b> 5-tuple hash that is only available for IP backend server groups</li><li>• If this parameter is not specified for an IP backend server group, <b>5_TUPLE_HASH</b> is used by default.</li></ul> |
| listeners        | Array of <a href="#">ListenerRef</a> objects     | <b>Definition:</b> Specifies the IDs of the listeners with which the backend server group is associated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| loadbalancers    | Array of <a href="#">LoadBalancerRef</a> objects | <b>Definition:</b> Specifies the IDs of the load balancers with which the backend server group is associated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| members          | Array of <a href="#">MemberRef</a> objects       | <b>Definition:</b> Specifies the IDs of backend servers in the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Parameter           | Type                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name                | String                           | <b>Definition:</b> Specifies the backend server group name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                 |
| project_id          | String                           | <b>Definition:</b> Specifies the project ID of the backend server group.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                    |
| protocol            | String                           | <b>Definition:</b> Specifies the protocol used by the backend server group to receive requests from the load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>TCP</b> , <b>UDP</b> , <b>IP</b> , <b>TLS</b> , <b>HTTP</b> , <b>HTTPS</b> , <b>GRPC</b> , or <b>QUIC</b> .                                                                                                                                                                               |
| session_persistence | <b>SessionPersistence</b> object | <b>Definition:</b> Specifies the sticky session.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ip_version          | String                           | <b>Definition:</b> Specifies the IP address version supported by the backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• Shared load balancers: The value is fixed at <b>v4</b>.</li><li>• Dedicated load balancers: The value can be <b>dualstack</b> or <b>v4</b>. If the protocol of the backend server group is TCP or UDP, the value is <b>dualstack</b>. If the protocol of the backend server group is HTTP, the value is <b>v4</b>.</li></ul> |
| slow_start          | <b>SlowStart</b> object          | <b>Definition:</b> Specifies slow start details. After you enable slow start, new backend servers added to the backend server group are warmed up, and the number of requests they can receive increases linearly during the configured slow start duration.                                                                                                                                                                                                                     |

| Parameter                         | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_deletion_protection_enable | Boolean | <b>Definition:</b> Whether to enable removal protection for the backend server. Once the option is enabled, backend servers cannot be removed from the backend server group.<br><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).<br><b>NOTE</b><br>Disable deletion protection or removal protection for your resources before deregistering your account. |
| created_at                        | String  | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                                             |
| updated_at                        | String  | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                                               |
| vpc_id                            | String  | <b>Definition:</b> Specifies the ID of the VPC where the backend server group works.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                       |

| Parameter         | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type              | String  | <b>Definition:</b> Specifies the backend server group type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>instance:</b> Any type of backend servers can be added. <b>vpc_id</b> is mandatory.</li><li>• <b>ip:</b> Only IP as backend servers can be added. <b>vpc_id</b> cannot be specified. <b>type</b> cannot be set to <b>ip</b> if the backend server group protocol is <b>IP</b>.</li><li>• <b>"":</b> Any type of backend servers can be added.</li></ul> |
| protection_status | String  | <b>Definition:</b> Specifies the protection status.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul>                                                                                                                                                                                                                     |
| protection_reason | String  | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>).                                                                                                                                                                                                                                                                                                 |
| any_port_enable   | Boolean | <b>Definition:</b> Specifies whether to enable <b>any_port_enable</b> for a backend server group. If this option is enabled, the listener routes the requests to the backend server over the same port as the frontend port. If this option is disabled, the listener routes the requests over the port specified by <b>protocol_port</b> .<br><b>Range:</b> <b>true</b> (enable this option) or <b>false</b> (disable this option)                                             |



| Parameter              | Type                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| connection_drain       | <a href="#">ConnectionDrain</a> object     | <b>Definition:</b> Specifies the configurations of deregistration delay. This parameter is only available for TCP, UDP, and QUIC backend server groups and TCP and UDP listeners.<br><br>This parameter takes effect when: <ul style="list-style-type: none"><li>• A backend server is removed from a backend server group.</li><li>• A backend server is detected unhealthy or health checks fail.</li><li>• The weight of a backend server is 0.</li></ul> |
| enterprise_project_id  | String                                     | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul>                                                                                                                                                                            |
| pool_health            | <a href="#">PoolHealth</a> object          | <b>Definition:</b> Specifies the configurations of the pool health feature.                                                                                                                                                                                                                                                                                                                                                                                  |
| public_border_group    | String                                     | <b>Definition:</b> Specifies the public border group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>center:</b> public border group of the central site</li><li>• Edge site name: public border group of an edge site</li></ul>                                                                                                                                                                                                                |
| quic_cid_hash_strategy | <a href="#">QuicCidHashStrategy</a> object | <b>Definition:</b> Specifies multi-path distribution configuration based on destination connection IDs.                                                                                                                                                                                                                                                                                                                                                      |

**Table 5-480** AzAffinity

| Parameter | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <p><b>Definition:</b> Specifies whether to enable AZ affinity for the backend server group. If this parameter is set to <b>true</b>, ELB forwards traffic across the backend servers in the same AZ as the load balancer.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is available only for IP, TCP, and UDP backend server groups.</li><li>• This parameter is not available for backend server groups that are associated with TLS listeners.</li><li>• If the parameter is set to <b>true</b>, parameter <b>pool_health</b> will be ignored.</li></ul> <p><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).</p> <p><b>Default value:</b> N/A</p> |

| Parameter                            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_minimum_healthy_member_percentage | Integer | <p><b>Definition:</b> Specifies a percentage that is used to determine the health of an AZ. If the percentage of healthy servers in the AZ of the load balancer falls below the specified value, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>az_minimum_healthy_member_percentage</b> shows the percentage of backend servers that are healthy in a backend server group of an AZ. The number of healthy servers is rounded up. For example, in AZ A, if there are three backend servers in the backend server group and <b>az_minimum_healthy_member_percentage</b> is set to 66%, the number of healthy servers is rounded up to 2 (<math>3 \times 0.66 = 1.98</math>). If there are fewer than two healthy servers in AZ A, <b>az_unhealthy_fallback_strategy</b> is triggered. If <b>az_minimum_healthy_member_percentage</b> is set to 67%, the number of healthy servers is rounded up to 3 (<math>3 \times 0.67 = 2.01</math>). If there are fewer than three healthy servers in AZ A, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enable</b> is set to <b>true</b>, <b>az_minimum_healthy_member_percentage</b> and <b>az_minimum_healthy_member_count</b> cannot be set to -1 at the same time.</li><li>• If <b>enable</b> is set to <b>true</b>, either <b>az_minimum_healthy_member_percentage</b> or <b>az_minimum_healthy_member_count</b> must be set to -1.</li></ul> <p><b>Range:</b> an integer ranging from -1 to 100. An integer from 0 to 100 indicates the percentage of healthy servers in the AZ of the load balancer. -1 indicates that <b>az_minimum_healthy_member_count</b> takes effect.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                       | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_minimum_healthy_member_count | Integer | <p><b>Definition:</b> Specifies a number that is used to determine the health of an AZ. If the number of healthy servers in the AZ of the load balancer falls below the specified value, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>az_minimum_healthy_member_count</b> shows the number of healthy servers in a backend server group of an AZ.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enable</b> is set to <b>true</b>, <b>az_minimum_healthy_member_percentage</b> and <b>az_minimum_healthy_member_count</b> cannot be set to <b>-1</b> at the same time.</li><li>• If <b>enable</b> is set to <b>true</b>, either <b>az_minimum_healthy_member_percentage</b> or <b>az_minimum_healthy_member_count</b> must be set to <b>-1</b>.</li></ul> <p><b>Range:</b> an integer ranging from <b>-1</b> to <b>10000</b>. An integer from 0 to 10000 indicates the number of healthy servers in the AZ of the load balancer. <b>-1</b> indicates that <b>az_minimum_healthy_member_percentage</b> takes effect.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                       | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_unhealthy_fall_back_strategy | String | <b>Definition:</b> Specifies how traffic will be distributed across backend servers in an AZ if the percentage or number of healthy servers in the AZ of the load balancer falls below the specified value.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>forward_to_all_member_of_local_az:</b> forwards requests across all backend servers in the same AZ as the load balancer, even if some servers are unhealthy.</li><li>• <b>forward_to_healthy_member_of_remote_az:</b> forwards requests across healthy backend servers in different AZs from the load balancer.</li><li>• <b>forward_to_all_healthy_member:</b> forwards requests across healthy backend servers in all AZs.</li><li>• <b>forward_to_all_member:</b> forwards requests across all backend servers in all AZs, even if some servers are unhealthy.</li></ul> <b>Constraints:</b> N/A<br><b>Default value:</b> forward_to_all_member_of_local_az |

**Table 5-481** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

**Table 5-482** LoadBalancerRef

| Parameter | Type   | Description                                                             |
|-----------|--------|-------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A |

**Table 5-483** MemberRef

| Parameter | Type   | Description                                           |
|-----------|--------|-------------------------------------------------------|
| id        | String | Specifies the backend server ID.<br><b>Range:</b> N/A |

**Table 5-484** SessionPersistence

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cookie_name         | String  | <b>Definition:</b> Specifies the cookie name.<br><b>Range:</b> The value can contain a maximum of 1,024 characters.                                                                                                                                                                                                                                                                                                                                                                                                        |
| type                | String  | <b>Definition:</b> Specifies the sticky session type.<br><b>Range:</b> SOURCE_IP, HTTP_COOKIE, or APP_COOKIE.                                                                                                                                                                                                                                                                                                                                                                                                              |
| persistence_timeout | Integer | <b>Definition:</b> Specifies the stickiness duration, in minutes. This parameter will not take effect when <b>type</b> is set to APP_COOKIE.<br><b>Range:</b> <ul style="list-style-type: none"><li>If the protocol of the backend server group is TCP, UDP, or QUIC, the value ranges from <b>1</b> to <b>60</b>, and the default value is <b>1</b>.</li><li>If the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>, and the default value is <b>1440</b>.</li></ul> |

**Table 5-485** SlowStart

| Parameter | Type    | Description                                                                                                                                                                                                               |
|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable slow start.<br><b>Range:</b> <ul style="list-style-type: none"><li><b>true:</b> This option will be enabled.</li><li><b>false:</b> This option will be disabled.</li></ul> |
| duration  | Integer | <b>Definition:</b> Specifies the slow start duration, in seconds.<br><b>Range:</b> 30 to 1200                                                                                                                             |

**Table 5-486** ConnectionDrain

| Parameter | Type    | Description                                                                                                                                                                                                                                |
|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable <b>connection_drain</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A |
| timeout   | Integer | <b>Definition:</b> Specifies the deregistration delay timeout, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> 10 to 4000<br><b>Constraints:</b> N/A                                                                               |

**Table 5-487** PoolHealth

| Parameter                    | Type    | Description                                                                                                                                                                                                                                                                                                              |
|------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| minimum_healthy_member_count | Integer | <b>Definition:</b> Specifies the number of healthy backend servers below which the backend server group is considered as unhealthy.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0</b> (default): <b>pool_health</b> does not take effect.</li><li>• <b>1</b>: <b>pool_health</b> takes effect.</li></ul> |

**Table 5-488** QuicCidHashStrategy

| Parameter | Type    | Description                                                                                                                                                                                                                                     |
|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| len       | Integer | <b>Definition:</b> Specifies the length of the hash factor in the connection ID.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 1 to 20<br><b>Default value:</b> 3 |

| Parameter | Type    | Description                                                                                                                                                                                                                                             |
|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| offset    | Integer | <b>Definition:</b> Specifies the start position in the connection ID as the hash factor.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 0 to 19<br><b>Default value:</b> 1 |

## Example Requests

Querying the details of a backend server group

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools/36ce7086-a496-4666-9064-5ba0e6840c75
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "pool" : {
 "name" : "my pool",
 "id" : "00ed68a5-8784-424e-8936-8dbb7a9d41e9",
 "description" : "",
 "lb_algorithm" : "ROUND_ROBIN",
 "protocol" : "TCP",
 "admin_state_up" : true,
 "loadbalancers" : [],
 "type" : "instance",
 "project_id" : "0c1503d710984bad92306faea3654dfd",
 "enterprise_project_id" : "0",
 "session_persistence" : null,
 "slow_start" : null,
 "healthmonitor_id" : "a5f47d4c-1187-402f-849c-c0a7767e36f5",
 "listeners" : [],
 "members" : [{
 "id" : "87b1130c-80dc-493d-b98a-add98ea4c6a2"
 }],
 "ip_version" : "dualstack",
 "member_deletion_protection_enable" : false,
 "created_at" : "2024-08-19T17:49:53Z",
 "updated_at" : "2024-09-09T09:21:05Z",
 "protection_status" : "nonProtection",
 "protection_reason" : "",
 "vpc_id" : "651594cf-18a0-4a77-942f-1a4ae216c123",
 "connection_drain" : {
 "enable" : true,
 "timeout" : 300
 },
 "pool_health" : {
 "minimum_healthy_member_count" : 0
 },
 "az_affinity" : {
 "enable" : true,
 "az_minimum_healthy_member_percentage" : -1,
 "az_minimum_healthy_member_count" : 1,

```



```
"az_unhealthy_fallback_strategy" : "forward_to_all_member_of_local_az"
},
"quic_cid_hash_strategy" : null,
"public_border_group" : "center",
"any_port_enable" : false
},
"request_id" : "2d974978-0733-404d-a21a-b29204f4803a"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowPoolSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowPoolRequest request = new ShowPoolRequest();
 request.withPoolId("{pool_id}");
 try {
 ShowPoolResponse response = client.showPool(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ShowPoolRequest()
 request.pool_id = "{pool_id}"
 response = client.show_pool(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
```

```
WithCredential(auth).
Build())

request := &model.ShowPoolRequest{
 request.PoolId = "{pool_id}"
 response, err := client.ShowPool(request)
 if err == nil {
 fmt.Printf("%v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.11.4 Updating a Backend Server Group

### Function

This API is used to update a backend server group.

### Constraints

The backend server group can be updated only when the provisioning status of the associated load balancer is **ACTIVE**.

### Calling Method

For details, see [Calling APIs](#).

### URI

PUT /v3/{project\_id}/elb/pools/{pool\_id}

**Table 5-489** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pool_id    | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                     |
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-490** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-491** Request body parameters

| Parameter | Mandatory | Type                                    | Description                                                                                                         |
|-----------|-----------|-----------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| pool      | Yes       | <a href="#">UpdatePoolOption</a> object | <b>Definition:</b> Specifies the request parameters for updating a backend server group.<br><b>Constraints:</b> N/A |

Table 5-492 UpdatePoolOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                        |
|----------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | <b>Definition:</b> Specifies the administrative status of the backend server group.<br><b>Constraints:</b> The value can only be <b>true</b> .<br><b>Range:</b> <b>true</b> (enabled)<br><b>Default value:</b> N/A |
| description    | No        | String  | <b>Definition:</b> Specifies supplementary information about the backend server group.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                |

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| lb_algorithm | No        | String | <p><b>Definition:</b> Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If the value is <b>SOURCE_IP</b> or <b>QUIC_CID</b>, the weights of backend servers in the backend server group are invalid.</li><li>• <b>QUIC_CID</b> is available only when the protocol of the backend server group is QUIC.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN:</b> weighted round robin</li><li>• <b>LEAST_CONNECTIONS:</b> weighted least connections</li><li>• <b>SOURCE_IP:</b> source IP hash</li><li>• <b>QUIC_CID:</b> connection ID</li><li>• <b>2_TUPLE_HASH:</b> 2-tuple hash that is only available for IP backend server groups</li><li>• <b>3_TUPLE_HASH:</b> 3-tuple hash that is only available for IP backend server groups</li><li>• <b>5_TUPLE_HASH:</b> 5-tuple hash that is only available for IP backend server groups</li></ul> <p><b>Default value:</b> N/A</p> |
| name         | No        | String | <p><b>Definition:</b> Specifies the backend server group name.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Parameter           | Mandatory | Type                                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|-----------|-----------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| session_persistence | No        | <a href="#">UpdatePoolSessionPersistenceOption</a> object | <b>Definition:</b> Specifies the sticky session.<br><b>Constraints:</b> Slow start and sticky session cannot be enabled at the same time. If both are enabled, sticky session will be invalid.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| slow_start          | No        | <a href="#">UpdatePoolSlowStartOption</a> object          | <b>Definition:</b> Specifies slow start details. After you enable slow start, new backend servers added to the backend server group are warmed up, and the number of requests they can receive increases linearly during the configured slow start duration.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is valid only when the backend server group protocol is HTTP, HTTPS, or GRPC. For other protocols, an error will be reported.</li><li>• Slow start and sticky session cannot be enabled at the same time. If both are enabled, sticky session will be invalid.</li><li>• This parameter is not supported by gateway load balancers. Please do not use it.</li></ul> |

| Parameter                         | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_deletion_protection_enable | No        | Boolean | <p><b>Definition:</b> Whether to enable removal protection for the backend server. Once the option is enabled, backend servers cannot be removed from the backend server group.</p> <p><b>Constraints:</b></p> <p>Once the option is enabled, an error will be returned when the following APIs are called to:</p> <ul style="list-style-type: none"><li>• Delete a load balancer and its associated resources (DELETE /v3/{project_id}/elb/loadbalancers/{loadbalancer_id}/force-elb).</li><li>• Delete a load balancer and its associated EIPs (POST /v3/{project_id}/elb/loadbalancers/{loadbalancer_id}/delete-cascade).</li><li>• Delete a listener and its associated resources (DELETE /v3/{project_id}/elb/listeners/{listener_id}/force).</li><li>• Delete a backend server group and its associated resources (DELETE /v3/{project_id}/elb/pools/{pool_id}/delete-cascade).</li><li>• Remove a backend server (DELETE /v3/{project_id}/elb/pools/{pool_id}/members/{member_id}).</li><li>• Remove backend servers in batches (POST /v3/{project_id}/elb/pools/{pool_id}/members/batch-delete).</li></ul> <p><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).</p> |



| Parameter         | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |           |        | <b>Default value:</b> false<br><b>NOTE</b><br>Disable deletion protection or removal protection for your resources before deregistering your account.                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| vpc_id            | No        | String | <b>Definition:</b> Specifies the ID of the VPC where the backend server group works.<br><b>Constraints:</b> This parameter can be updated only when <b>vpc_id</b> is left blank.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                    |
| type              | No        | String | <b>Definition:</b> Specifies the type of the backend server group.<br><b>Constraints:</b> <ul style="list-style-type: none"> <li>This parameter can be updated only when <b>type</b> is left blank.</li> <li><b>instance:</b> Any type of backend servers can be added. <b>vpc_id</b> is mandatory.</li> <li><b>ip:</b> Only IP as backend servers can be added. <b>vpc_id</b> cannot be specified. <b>type</b> cannot be set to <b>ip</b> if the backend server group protocol is <b>IP</b>.</li> <li><b>"":</b> Any type of backend servers can be added.</li> </ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| protection_status | No        | String | <b>Definition:</b> Specifies the protection status.<br><b>Constraints:</b> N/A<br>Value options: <ul style="list-style-type: none"> <li><b>nonProtection:</b> The resource is not protected.</li> <li><b>consoleProtection:</b> Modification is not allowed on the console.</li> </ul> <b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                      |

| Parameter         | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_reason | No        | String  | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Constraints:</b> This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>).<br><b>Default value:</b> N/A                                                                                                                                                                                                                                          |
| any_port_enable   | No        | Boolean | <b>Definition:</b> Specifies whether to enable <b>any_port_enable</b> for a backend server group. If this option is enabled, the listener routes the requests to the backend server over the same port as the frontend port. If this option is disabled, the listener routes the requests over the port specified by <b>protocol_port</b> .<br><b>Constraints:</b> This option is available only for TCP, UDP, or QUIC backend server groups.<br><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).<br><b>Default value:</b> <b>false</b> |

| Parameter              | Mandatory | Type                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------------|-----------|--------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| connection_drain       | No        | <a href="#">ConnectionDrain</a> object     | <b>Definition:</b> Specifies the configurations of deregistration delay.<br>This parameter takes effect when: <ul style="list-style-type: none"><li>• A backend server is removed from a backend server group.</li><li>• A backend server is detected unhealthy or health checks fail.</li><li>• The weight of a backend server is 0.</li></ul> <b>Constraints:</b> This parameter is only available for TCP, UDP, and QUIC backend server groups and TCP and UDP listeners. |
| pool_health            | No        | <a href="#">PoolHealth</a> object          | <b>Definition:</b> Specifies the configurations of the pool health feature.<br><b>Constraints:</b> N/A                                                                                                                                                                                                                                                                                                                                                                       |
| quic_cid_hash_strategy | No        | <a href="#">QuicCidHashStrategy</a> object | <b>Definition:</b> Specifies multi-path distribution configuration based on destination connection IDs.<br><b>Constraints:</b> N/A                                                                                                                                                                                                                                                                                                                                           |
| az_affinity            | No        | <a href="#">UpdateAzAffinity</a> object    | <b>Definition:</b> Specifies how AZ affinity is configured for the backend server group.<br><b>Constraints:</b> N/A                                                                                                                                                                                                                                                                                                                                                          |

**Table 5-493** UpdatePoolSessionPersistenceOption

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cookie_name | No        | String | <b>Definition:</b> Specifies the cookie name.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter takes effect only when <b>type</b> is set to <b>APP_COOKIE</b>. Otherwise, an error will be returned.</li><li>• This parameter is not supported by gateway load balancers. Please do not use it.</li></ul> <b>Range:</b> The value can contain a maximum of 1,024 characters.<br><b>Default value:</b> N/A                                                                                                                                                                                                                          |
| type        | No        | String | <b>Definition:</b> Specifies the sticky session type.<br><b>Note:</b> <ul style="list-style-type: none"><li>• If the protocol of the backend server group is <b>TCP</b> or <b>UDP</b>, only <b>SOURCE_IP</b> takes effect.</li><li>• If the protocol of the backend server group is <b>HTTP</b> or <b>HTTPS</b>, only <b>HTTP_COOKIE</b> and <b>APP_COOKIE</b> take effect.</li><li>• If the backend server group's protocol is <b>QUIC</b>, <b>session_persistence</b> must be set to <b>true</b> and <b>type</b> set to <b>SOURCE_IP</b>.</li></ul> <b>Range:</b> <b>SOURCE_IP</b> , <b>HTTP_COOKIE</b> , or <b>APP_COOKIE</b> .<br><b>Default value:</b> N/A |

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| persistence_timeout | No        | Integer | <b>Definition:</b> Specifies the stickiness duration, in minutes.<br><b>Constraints:</b> This parameter will not take effect when <b>type</b> is set to <b>APP_COOKIE</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>If the protocol of the backend server group is TCP, UDP, or QUIC, the value ranges from <b>1</b> to <b>60</b>, and the default value is <b>1</b>.</li><li>If the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>, and the default value is <b>1440</b>.</li></ul> <b>Default value:</b> N/A |

**Table 5-494** UpdatePoolSlowStartOption

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                               |
|-----------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | No        | Boolean | <b>Definition:</b> Specifies whether to enable slow start.<br><b>Constraints:</b> N/A <ul style="list-style-type: none"><li><b>true:</b> Enable slow start.</li><li><b>false:</b> Disable slow start.</li></ul> <b>Default value:</b> N/A |
| duration  | No        | Integer | <b>Definition:</b> Specifies the slow start duration, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> 30 to 1200<br><b>Default value:</b> N/A                                                                                     |

**Table 5-495** ConnectionDrain

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | No        | Boolean | <b>Definition:</b> Specifies whether to enable <b>connection_drain</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A |
| timeout   | No        | Integer | <b>Definition:</b> Specifies the deregistration delay timeout, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> 10 to 4000<br><b>Constraints:</b> N/A                                                                               |

**Table 5-496** PoolHealth

| Parameter                    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                              |
|------------------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| minimum_healthy_member_count | No        | Integer | <b>Definition:</b> Specifies the number of healthy backend servers below which the backend server group is considered as unhealthy.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0</b> (default): <b>pool_health</b> does not take effect.</li><li>• <b>1</b>: <b>pool_health</b> takes effect.</li></ul> |

**Table 5-497** QuicCidHashStrategy

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                     |
|-----------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| len       | Yes       | Integer | <b>Definition:</b> Specifies the length of the hash factor in the connection ID.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 1 to 20<br><b>Default value:</b> 3 |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                             |
|-----------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| offset    | Yes       | Integer | <b>Definition:</b> Specifies the start position in the connection ID as the hash factor.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 0 to 19<br><b>Default value:</b> 1 |

**Table 5-498** UpdateAzAffinity

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | No        | Boolean | <b>Definition:</b> Specifies whether to enable AZ affinity for the backend server group. If this parameter is set to <b>true</b> , ELB forwards traffic across the backend servers in the same AZ as the load balancer.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• AZ affinity cannot be enabled for a backend server group that has IP as backend servers whose <b>availability_zone</b> is not specified.</li><li>• AZ affinity cannot be enabled if the backend server is bound to a TLS listener.</li><li>• This parameter is available for backend server groups that are associated with IP, UDP, and TCP listeners.</li><li>• If the parameter is set to <b>true</b>, parameter <b>pool_health</b> will be ignored.</li></ul> <b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).<br><b>Default value:</b> N/A |

| Parameter                            | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------------------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_minimum_healthy_member_percentage | No        | Integer | <p><b>Definition:</b> Specifies a percentage that is used to determine the health of an AZ. If the percentage of healthy servers in the AZ of the load balancer falls below the specified value, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>az_minimum_healthy_member_percentage</b> shows the percentage of backend servers that are healthy in a backend server group of an AZ. The number of healthy servers is rounded up. For example, in AZ A, if there are three backend servers in the backend server group and <b>az_minimum_healthy_member_percentage</b> is set to 66%, the number of healthy servers is rounded up to 2 (<math>3 \times 0.66 = 1.98</math>). If there are fewer than two healthy servers in AZ A, <b>az_unhealthy_fallback_strategy</b> is triggered. If <b>az_minimum_healthy_member_percentage</b> is set to 67%, the number of healthy servers is rounded up to 3 (<math>3 \times 0.67 = 2.01</math>). If there are fewer than three healthy servers in AZ A, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enable</b> is set to <b>true</b>, <b>az_minimum_healthy_member_percentage</b> and <b>az_minimum_healthy_member_count</b> cannot be set to <b>-1</b> at the same time.</li><li>• If <b>enable</b> is set to <b>true</b>, either <b>az_minimum_healthy_member_percentage</b> or <b>az_minimum_healthy_member_count</b> must be set to <b>-1</b>.</li></ul> |



| Parameter                       | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                 |           |         | <p><b>Range:</b> an integer ranging from <b>-1</b> to <b>100</b>. An integer from 0 to 100 indicates the percentage of healthy servers in the AZ of the load balancer. <b>-1</b> indicates that <b>az_minimum_healthy_member_count</b> takes effect.</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| az_minimum_healthy_member_count | No        | Integer | <p><b>Definition:</b> Specifies a number that is used to determine the health of an AZ. If the number of healthy servers in the AZ of the load balancer falls below the specified value, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>az_minimum_healthy_member_count</b> shows the number of healthy servers in a backend server group of an AZ.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enable</b> is set to <b>true</b>, <b>az_minimum_healthy_member_percentage</b> and <b>az_minimum_healthy_member_count</b> cannot be set to <b>-1</b> at the same time.</li><li>• If <b>enable</b> is set to <b>true</b>, either <b>az_minimum_healthy_member_percentage</b> or <b>az_minimum_healthy_member_count</b> must be set to <b>-1</b>.</li></ul> <p><b>Range:</b> an integer ranging from <b>-1</b> to <b>10000</b>. An integer from 0 to 10000 indicates the number of healthy servers in the AZ of the load balancer. <b>-1</b> indicates that <b>az_minimum_healthy_member_percentage</b> takes effect.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_unhealthy_fallback_strategy | No        | String | <p><b>Definition:</b> Specifies how traffic will be distributed across backend servers in an AZ if the percentage or number of healthy servers in the AZ of the load balancer falls below the specified value.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>forward_to_all_member_of_local_az:</b> forwards requests across all backend servers in the same AZ as the load balancer, even if some servers are unhealthy.</li><li>• <b>forward_to_healthy_member_of_remote_az:</b> forwards requests across healthy backend servers in different AZs from the load balancer.</li><li>• <b>forward_to_all_healthy_member:</b> forwards requests across healthy backend servers in all AZs.</li><li>• <b>forward_to_all_member:</b> forwards requests across all backend servers in all AZs, even if some servers are unhealthy.</li></ul> <p><b>Constraints:</b> N/A</p> <p><b>Default value:</b> forward_to_all_member_of_local_az</p> |

## Response Parameters

Status code: 200

**Table 5-499** Response body parameters

| Parameter  | Type               | Description                                                                                                                                                                          |
|------------|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String             | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| pool       | <b>Pool</b> object | <b>Definition:</b> Specifies the response parameters for updating a backend server group.                                                                                            |

**Table 5-500** Pool

| Parameter        | Type                     | Description                                                                                                                                                    |
|------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up   | Boolean                  | <b>Definition:</b> Specifies the administrative status of the backend server group. The value can only be <b>true</b> .<br><b>Range:</b> <b>true</b> (enabled) |
| az_affinity      | <b>AzAffinity</b> object | <b>Definition:</b> Specifies how AZ affinity is configured for the backend server group.                                                                       |
| description      | String                   | <b>Definition:</b> Provides supplementary information about the backend server group.<br><b>Range:</b> N/A                                                     |
| healthmonitor_id | String                   | <b>Definition:</b> Specifies the ID of the health check configured for the backend server group.<br><b>Range:</b> N/A                                          |
| id               | String                   | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A                                                                                 |

| Parameter     | Type                                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| lb_algorithm  | String                                           | <b>Definition:</b> Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN:</b> weighted round robin</li><li>• <b>LEAST_CONNECTIONS:</b> weighted least connections</li><li>• <b>SOURCE_IP:</b> source IP hash</li><li>• <b>QUIC_CID:</b> connection ID</li><li>• <b>2_TUPLE_HASH:</b> 2-tuple hash that is only available for IP backend server groups</li><li>• <b>3_TUPLE_HASH:</b> 3-tuple hash that is only available for IP backend server groups</li><li>• <b>5_TUPLE_HASH:</b> 5-tuple hash that is only available for IP backend server groups</li><li>• If this parameter is not specified for an IP backend server group, <b>5_TUPLE_HASH</b> is used by default.</li></ul> |
| listeners     | Array of <a href="#">ListenerRef</a> objects     | <b>Definition:</b> Specifies the IDs of the listeners with which the backend server group is associated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| loadbalancers | Array of <a href="#">LoadBalancerRef</a> objects | <b>Definition:</b> Specifies the IDs of the load balancers with which the backend server group is associated.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| members       | Array of <a href="#">MemberRef</a> objects       | <b>Definition:</b> Specifies the IDs of backend servers in the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| name          | String                                           | <b>Definition:</b> Specifies the backend server group name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| project_id    | String                                           | <b>Definition:</b> Specifies the project ID of the backend server group.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Parameter                         | Type                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------------------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol                          | String                           | <b>Definition:</b> Specifies the protocol used by the backend server group to receive requests from the load balancer.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>TCP</b> , <b>UDP</b> , <b>IP</b> , <b>TLS</b> , <b>HTTP</b> , <b>HTTPS</b> , <b>GRPC</b> , or <b>QUIC</b> .                                                                                                                                                                               |
| session_persistence               | <b>SessionPersistence</b> object | <b>Definition:</b> Specifies the sticky session.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ip_version                        | String                           | <b>Definition:</b> Specifies the IP address version supported by the backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• Shared load balancers: The value is fixed at <b>v4</b>.</li><li>• Dedicated load balancers: The value can be <b>dualstack</b> or <b>v4</b>. If the protocol of the backend server group is TCP or UDP, the value is <b>dualstack</b>. If the protocol of the backend server group is HTTP, the value is <b>v4</b>.</li></ul> |
| slow_start                        | <b>SlowStart</b> object          | <b>Definition:</b> Specifies slow start details. After you enable slow start, new backend servers added to the backend server group are warmed up, and the number of requests they can receive increases linearly during the configured slow start duration.                                                                                                                                                                                                                     |
| member_deletion_protection_enable | Boolean                          | <b>Definition:</b> Whether to enable removal protection for the backend server. Once the option is enabled, backend servers cannot be removed from the backend server group.<br><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).<br><b>NOTE</b><br>Disable deletion protection or removal protection for your resources before deregistering your account.                                                                                  |

| Parameter         | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| created_at        | String | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br><br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                                                                                                                         |
| updated_at        | String | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br><br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                                                                                                                           |
| vpc_id            | String | <b>Definition:</b> Specifies the ID of the VPC where the backend server group works.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                       |
| type              | String | <b>Definition:</b> Specifies the backend server group type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>instance:</b> Any type of backend servers can be added. <b>vpc_id</b> is mandatory.</li><li>• <b>ip:</b> Only IP as backend servers can be added. <b>vpc_id</b> cannot be specified. <b>type</b> cannot be set to <b>ip</b> if the backend server group protocol is <b>IP</b>.</li><li>• <b>"":</b> Any type of backend servers can be added.</li></ul> |
| protection_status | String | <b>Definition:</b> Specifies the protection status.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection:</b> The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul>                                                                                                                                                                                                                     |

| Parameter             | Type                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------|-------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_reason     | String                        | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>).                                                                                                                                                                                                                                                                          |
| any_port_enable       | Boolean                       | <b>Definition:</b> Specifies whether to enable <b>any_port_enable</b> for a backend server group. If this option is enabled, the listener routes the requests to the backend server over the same port as the frontend port. If this option is disabled, the listener routes the requests over the port specified by <b>protocol_port</b> .<br><b>Range:</b> <b>true</b> (enable this option) or <b>false</b> (disable this option)                      |
| connection_drain      | <b>ConnectionDrain</b> object | <b>Definition:</b> Specifies the configurations of deregistration delay. This parameter is only available for TCP, UDP, and QUIC backend server groups and TCP and UDP listeners.<br>This parameter takes effect when: <ul style="list-style-type: none"><li>• A backend server is removed from a backend server group.</li><li>• A backend server is detected unhealthy or health checks fail.</li><li>• The weight of a backend server is 0.</li></ul> |
| enterprise_project_id | String                        | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul>                                                                                                                                                                        |
| pool_health           | <b>PoolHealth</b> object      | <b>Definition:</b> Specifies the configurations of the pool health feature.                                                                                                                                                                                                                                                                                                                                                                              |
| public_border_group   | String                        | <b>Definition:</b> Specifies the public border group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>center:</b> public border group of the central site</li><li>• Edge site name: public border group of an edge site</li></ul>                                                                                                                                                                                                            |

| Parameter              | Type                       | Description                                                                                             |
|------------------------|----------------------------|---------------------------------------------------------------------------------------------------------|
| quic_cid_hash_strategy | QuicCidHashStrategy object | <b>Definition:</b> Specifies multi-path distribution configuration based on destination connection IDs. |

Table 5-501 AzAffinity

| Parameter | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <p><b>Definition:</b> Specifies whether to enable AZ affinity for the backend server group. If this parameter is set to <b>true</b>, ELB forwards traffic across the backend servers in the same AZ as the load balancer.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is available only for IP, TCP, and UDP backend server groups.</li><li>• This parameter is not available for backend server groups that are associated with TLS listeners.</li><li>• If the parameter is set to <b>true</b>, parameter <b>pool_health</b> will be ignored.</li></ul> <p><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).</p> <p><b>Default value:</b> N/A</p> |



| Parameter                            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_minimum_healthy_member_percentage | Integer | <p><b>Definition:</b> Specifies a percentage that is used to determine the health of an AZ. If the percentage of healthy servers in the AZ of the load balancer falls below the specified value, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>az_minimum_healthy_member_percentage</b> shows the percentage of backend servers that are healthy in a backend server group of an AZ. The number of healthy servers is rounded up. For example, in AZ A, if there are three backend servers in the backend server group and <b>az_minimum_healthy_member_percentage</b> is set to 66%, the number of healthy servers is rounded up to 2 (<math>3 \times 0.66 = 1.98</math>). If there are fewer than two healthy servers in AZ A, <b>az_unhealthy_fallback_strategy</b> is triggered. If <b>az_minimum_healthy_member_percentage</b> is set to 67%, the number of healthy servers is rounded up to 3 (<math>3 \times 0.67 = 2.01</math>). If there are fewer than three healthy servers in AZ A, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enable</b> is set to <b>true</b>, <b>az_minimum_healthy_member_percentage</b> and <b>az_minimum_healthy_member_count</b> cannot be set to -1 at the same time.</li><li>• If <b>enable</b> is set to <b>true</b>, either <b>az_minimum_healthy_member_percentage</b> or <b>az_minimum_healthy_member_count</b> must be set to -1.</li></ul> <p><b>Range:</b> an integer ranging from -1 to 100. An integer from 0 to 100 indicates the percentage of healthy servers in the AZ of the load balancer. -1 indicates that <b>az_minimum_healthy_member_count</b> takes effect.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                       | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_minimum_healthy_member_count | Integer | <p><b>Definition:</b> Specifies a number that is used to determine the health of an AZ. If the number of healthy servers in the AZ of the load balancer falls below the specified value, <b>az_unhealthy_fallback_strategy</b> is triggered.</p> <p><b>az_minimum_healthy_member_count</b> shows the number of healthy servers in a backend server group of an AZ.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enable</b> is set to <b>true</b>, <b>az_minimum_healthy_member_percentage</b> and <b>az_minimum_healthy_member_count</b> cannot be set to <b>-1</b> at the same time.</li><li>• If <b>enable</b> is set to <b>true</b>, either <b>az_minimum_healthy_member_percentage</b> or <b>az_minimum_healthy_member_count</b> must be set to <b>-1</b>.</li></ul> <p><b>Range:</b> an integer ranging from <b>-1</b> to <b>10000</b>. An integer from 0 to 10000 indicates the number of healthy servers in the AZ of the load balancer. <b>-1</b> indicates that <b>az_minimum_healthy_member_percentage</b> takes effect.</p> <p><b>Default value:</b> N/A</p> |

| Parameter                       | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| az_unhealthy_fall_back_strategy | String | <b>Definition:</b> Specifies how traffic will be distributed across backend servers in an AZ if the percentage or number of healthy servers in the AZ of the load balancer falls below the specified value.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>forward_to_all_member_of_local_az:</b> forwards requests across all backend servers in the same AZ as the load balancer, even if some servers are unhealthy.</li><li>• <b>forward_to_healthy_member_of_remote_az:</b> forwards requests across healthy backend servers in different AZs from the load balancer.</li><li>• <b>forward_to_all_healthy_member:</b> forwards requests across healthy backend servers in all AZs.</li><li>• <b>forward_to_all_member:</b> forwards requests across all backend servers in all AZs, even if some servers are unhealthy.</li></ul> <b>Constraints:</b> N/A<br><b>Default value:</b> forward_to_all_member_of_local_az |

**Table 5-502** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

**Table 5-503** LoadBalancerRef

| Parameter | Type   | Description                                                             |
|-----------|--------|-------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A |

**Table 5-504** MemberRef

| Parameter | Type   | Description                                           |
|-----------|--------|-------------------------------------------------------|
| id        | String | Specifies the backend server ID.<br><b>Range:</b> N/A |

**Table 5-505** SessionPersistence

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cookie_name         | String  | <b>Definition:</b> Specifies the cookie name.<br><b>Range:</b> The value can contain a maximum of 1,024 characters.                                                                                                                                                                                                                                                                                                                                                                                                                |
| type                | String  | <b>Definition:</b> Specifies the sticky session type.<br><b>Range:</b> <b>SOURCE_IP</b> , <b>HTTP_COOKIE</b> , or <b>APP_COOKIE</b> .                                                                                                                                                                                                                                                                                                                                                                                              |
| persistence_timeout | Integer | <b>Definition:</b> Specifies the stickiness duration, in minutes. This parameter will not take effect when <b>type</b> is set to <b>APP_COOKIE</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>If the protocol of the backend server group is TCP, UDP, or QUIC, the value ranges from <b>1</b> to <b>60</b>, and the default value is <b>1</b>.</li><li>If the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>, and the default value is <b>1440</b>.</li></ul> |

**Table 5-506** SlowStart

| Parameter | Type    | Description                                                                                                                                                                                                               |
|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable slow start.<br><b>Range:</b> <ul style="list-style-type: none"><li><b>true:</b> This option will be enabled.</li><li><b>false:</b> This option will be disabled.</li></ul> |
| duration  | Integer | <b>Definition:</b> Specifies the slow start duration, in seconds.<br><b>Range:</b> 30 to 1200                                                                                                                             |

**Table 5-507** ConnectionDrain

| Parameter | Type    | Description                                                                                                                                                                                                                                |
|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable <b>connection_drain</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A |
| timeout   | Integer | <b>Definition:</b> Specifies the deregistration delay timeout, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> 10 to 4000<br><b>Constraints:</b> N/A                                                                               |

**Table 5-508** PoolHealth

| Parameter                    | Type    | Description                                                                                                                                                                                                                                                                                                              |
|------------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| minimum_healthy_member_count | Integer | <b>Definition:</b> Specifies the number of healthy backend servers below which the backend server group is considered as unhealthy.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0</b> (default): <b>pool_health</b> does not take effect.</li><li>• <b>1</b>: <b>pool_health</b> takes effect.</li></ul> |

**Table 5-509** QuicCidHashStrategy

| Parameter | Type    | Description                                                                                                                                                                                                                                     |
|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| len       | Integer | <b>Definition:</b> Specifies the length of the hash factor in the connection ID.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 1 to 20<br><b>Default value:</b> 3 |

| Parameter | Type    | Description                                                                                                                                                                                                                                             |
|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| offset    | Integer | <b>Definition:</b> Specifies the start position in the connection ID as the hash factor.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 0 to 19<br><b>Default value:</b> 1 |

## Example Requests

Changing the load balancing algorithm of a backend server group

```
PUT https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools/36ce7086-a496-4666-9064-5ba0e6840c75
```

```
{
 "pool": {
 "name": "My pool.",
 "description": "My pool update",
 "lb_algorithm": "LEAST_CONNECTIONS"
 }
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "pool": {
 "name": "my pool",
 "id": "00ed68a5-8784-424e-8936-8dbb7a9d41e9",
 "description": "",
 "lb_algorithm": "ROUND_ROBIN",
 "protocol": "TCP",
 "admin_state_up": true,
 "loadbalancers": [],
 "type": "instance",
 "project_id": "0c1503d710984bad92306faea3654dfd",
 "enterprise_project_id": "0",
 "session_persistence": null,
 "slow_start": null,
 "healthmonitor_id": "a5f47d4c-1187-402f-849c-c0a7767e36f5",
 "listeners": [],
 "members": [{
 "id": "87b1130c-80dc-493d-b98a-add98ea4c6a2"
 }],
 "ip_version": "dualstack",
 "member_deletion_protection_enable": false,
 "created_at": "2024-08-19T17:49:53Z",
 "updated_at": "2024-09-09T09:21:05Z",
 "protection_status": "nonProtection",
 "protection_reason": "",
 "vpc_id": "651594cf-18a0-4a77-942f-1a4ae216c123",
 "connection_drain": {
 "enable": true,
 "timeout": 300
 }
 }
}
```

```
 },
 "pool_health" : {
 "minimum_healthy_member_count" : 0
 },
 "az_affinity" : {
 "enable" : true,
 "az_minimum_healthy_member_percentage" : -1,
 "az_minimum_healthy_member_count" : 1,
 "az_unhealthy_fallback_strategy" : "forward_to_all_member_of_local_az"
 },
 "quic_cid_hash_strategy" : null,
 "public_border_group" : "center",
 "any_port_enable" : false
 },
 "request_id" : "2d974978-0733-404d-a21a-b29204f4803a"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Changing the load balancing algorithm of a backend server group

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class UpdatePoolSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();

 UpdatePoolRequest request = new UpdatePoolRequest();
 request.withPoolId("{pool_id}");
 UpdatePoolRequestBody body = new UpdatePoolRequestBody();
 UpdatePoolOption poolbody = new UpdatePoolOption();
 poolbody.withDescription("My pool update")
 .withLbAlgorithm("LEAST_CONNECTIONS")
 .withName("My pool.");
 body.withPool(poolbody);
 request.withBody(body);
 }
}
```

```
try {
 UpdatePoolResponse response = client.updatePool(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

### Changing the load balancing algorithm of a backend server group

```
coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = UpdatePoolRequest()
 request.pool_id = "{pool_id}"
 poolbody = UpdatePoolOption(
 description="My pool update",
 lb_algorithm="LEAST_CONNECTIONS",
 name="My pool."
)
 request.body = UpdatePoolRequestBody(
 pool=poolbody
)
 response = client.update_pool(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Changing the load balancing algorithm of a backend server group



```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.UpdatePoolRequest{}
 request.PoolId = "{pool_id}"
 descriptionPool:= "My pool update"
 lbAlgorithmPool:= "LEAST_CONNECTIONS"
 namePool:= "My pool."
 poolbody := &model.UpdatePoolOption{
 Description: &descriptionPool,
 LbAlgorithm: &lbAlgorithmPool,
 Name: &namePool,
 }
 request.Body = &model.UpdatePoolRequestBody{
 Pool: poolbody,
 }
 response, err := client.UpdatePool(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.11.5 Deleting a Backend Server Group

### Function

This API is used to delete a backend server group.

### Constraints

A backend server group can be deleted only after all servers are removed from the group, the health check configured for the group is deleted, and the group has no forwarding policies associated.

### Calling Method

For details, see [Calling APIs](#).

### URI

DELETE /v3/{project\_id}/elb/pools/{pool\_id}

**Table 5-510** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| pool_id    | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                     |

## Request Parameters

**Table 5-511** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 204**

Successful request.

None

## Example Requests

Deleting a backend server group

```
DELETE https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools/36ce7086-a496-4666-9064-5ba0e6840c75
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeletePoolSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 }
}
```

```
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
DeletePoolRequest request = new DeletePoolRequest();
request.withPoolId("{pool_id}");
try {
 DeletePoolResponse response = client.deletePool(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeletePoolRequest()
 request.pool_id = "{pool_id}"
 response = client.delete_pool(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.DeletePoolRequest{}
 request.PoolId = "{pool_id}"
 response, err := client.DeletePool(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.11.6 Deleting a Backend Server Group and Associated Resources

### Function

This API is used to delete a backend server group and associated resources, including backend servers and health checks.

### Constraints

Deleting a backend server group will also delete its associated resources, including backend servers and health checks. The backend server group cannot be associated with a forwarding policy, either.

### Calling Method

For details, see [Calling APIs](#).

### URI

DELETE /v3/{project\_id}/elb/pools/{pool\_id}/delete-cascade

**Table 5-512** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| pool_id    | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                     |

## Request Parameters

**Table 5-513** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 204**

Successful request.

None

## Example Requests

```
DELETE https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools/36ce7086-a496-4666-9064-5ba0e6840c75/delete-cascade
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeletePoolCascadeSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
```

```
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR_REGION>"))
 .build();

DeletePoolCascadeRequest request = new DeletePoolCascadeRequest();
request.withPoolId("{pool_id}");
try {
 DeletePoolCascadeResponse response = client.deletePoolCascade(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR_REGION>")) \
 .build()

 try:
 request = DeletePoolCascadeRequest()
 request.pool_id = "{pool_id}"
 response = client.delete_pool_cascade(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```



## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.DeletePoolCascadeRequest{}
 request.PoolId = "{pool_id}"
 response, err := client.DeletePoolCascade(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.11.7 Batch Deleting Backend Server Groups

### Function

This API is used to batch delete backend server groups.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/pools/batch-delete

**Table 5-514** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

### Request Parameters

**Table 5-515** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-516** Request body parameters

| Parameter | Mandatory | Type             | Description                                                   |
|-----------|-----------|------------------|---------------------------------------------------------------|
| pools     | Yes       | Array of strings | Specifies the IDs of the backend server groups to be deleted. |

## Response Parameters

**Status code: 200**

**Table 5-517** Response body parameters

| Parameter | Type                                                  | Description                                                           |
|-----------|-------------------------------------------------------|-----------------------------------------------------------------------|
| pools     | Array of <a href="#">BatchDeletePoolsResp</a> objects | Specifies the response body for batch deleting backend server groups. |

**Table 5-518** BatchDeletePoolsResp

| Parameter  | Type   | Description                                                                                                                                                                                                   |
|------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id         | String | Specifies the IDs of the backend server groups that are deleted.                                                                                                                                              |
| ret_status | String | Specifies the deletion result of the backend server group. <b>not found</b> indicates that the backend server group does not exist, and <b>successful</b> indicates that the backend server group is deleted. |
| ret_code   | String | Specifies the error code when the deletion fails.                                                                                                                                                             |

## Example Requests

Batch deleting backend server groups

```
POST https://{ELB_Endpoint}/v3/{project_id}/elb/pools/batch-delete
```

```
{
 "pools" : ["de3404aeb44f499893fb42a0b218a515", "de3404aeb44f499893fb42a0b218a123"]
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "pools": [{
 "id": "de3404aeb44f499893fb42a0b218a515",
 "ret_status": "successful"
 }, {
 "id": "de3404aeb44f499893fb42a0b218a515",
 "ret_status": "not found",
 "ret_code": "ELB.9903"
 }],
 "request_id": "98414965-856c-4be3-8a33-3e08432a222e"
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

# 5.12 Backend Server

## 5.12.1 Adding a Backend Server

### Function

This API is used to add a backend server.

### Constraints

When you add backend servers, note the following:

- Two backend servers in the same backend server group must have different IP addresses and ports.
- If no subnets are specified during cloud server creation, IP as backend servers can be added. In this case, **address** must be set to an IPv4 address, the protocol of the backend server group must be TCP, HTTP, or HTTPS, and **IP as a Backend** must have been enabled for the load balancer.
- If a subnet is specified during cloud server creation, the subnet must be in the same VPC where the load balancer resides.
- If the backend server group supports IPv4/IPv6 dual stack, **address** can be an IPv4 address or an IPv6 address. If the backend server group supports only IPv4, **address** can only be an IPv4 address.
- If **type** of the backend server is set to **instance**, **address** must be a private IP address that is not used by any load balancer.

- If the backend server group protocol is IP, **protocol\_port** of the backend server must be **0** and IP as backend servers cannot be added.

## Calling Method

For details, see [Calling APIs](#).

## URI

POST /v3/{project\_id}/elb/pools/{pool\_id}/members

**Table 5-519** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pool_id    | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                     |
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-520** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-521** Request body parameters

| Parameter | Mandatory | Type                      | Description                                                                 |
|-----------|-----------|---------------------------|-----------------------------------------------------------------------------|
| member    | Yes       | CreateMemberOption object | <b>Definition:</b> Specifies the backend server.<br><b>Constraints:</b> N/A |

**Table 5-522** CreateMemberOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| address        | Yes       | String  | <b>Definition:</b> Specifies the IP address of the backend server.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If <b>subnet_cidr_id</b> is left blank, IP as backend servers will be added. In this case, the IP address must be an IPv4 address.</li><li>• If <b>subnet_cidr_id</b> is not left blank, ECSs will be added as backend servers. It must be in the subnet specified by <b>subnet_cidr_id</b>.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| admin_state_up | No        | Boolean | <b>Definition:</b> Specifies the administrative status of the backend server.<br><b>Constraints:</b> Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether ECSs exist.<br><b>Range:</b> If ECSs exist, the value is <b>true</b> . Otherwise, the value is <b>false</b> .<br><b>Default value:</b> N/A                                                                                                          |

| Parameter     | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name          | No        | String  | <b>Definition:</b> Specifies the backend server name. Note: The name is not an ECS name. If this parameter is not specified, an empty value will be returned.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                             |
| project_id    | No        | String  | <b>Definition:</b> Specifies the project ID of the backend server.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                        |
| protocol_port | No        | Integer | <b>Definition:</b> Specifies the port used by the backend server to receive requests.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter can be left blank because it does not take effect if <b>any_port_enable</b> is set to <b>true</b> for a backend server group.</li><li>• <b>protocol_port</b> must be set to <b>0</b> for gateway load balancers with IP backend server groups associated.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| subnet_cidr_id | No        | String | <p><b>Definition:</b> Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. <b>neutron_subnet_id</b> defines IPv4 subnets, and <b>neutron_network_id</b> defines IPv6 subnets.</p> <p>You can query parameter <b>neutron_subnet_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv4 subnet ID.</p> <p>You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv6 network ID.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The IPv4 or IPv6 subnet must be in the same VPC as the subnet of the load balancer.</li><li>• If <b>ip_target_enable</b> is set to <b>true</b>, this parameter can be left blank, indicating that an IP as backend server will be added. In this case, IP as backend servers must use private IPv4 addresses, and the protocol of the backend server group must be TCP, UDP, TLS, HTTP, HTTPS, QUIC, or GRPC.</li><li>• If <b>ip_target_enable</b> is set to <b>false</b>, this parameter must be specified.</li><li>• This parameter must be specified for gateway load balancers with IP backend server groups. The subnet of the backend server must be in the same VPC as the load balancer.</li></ul> |



| Parameter         | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                   |           |         | <b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| weight            | No        | Integer | <b>Definition:</b> Specifies the weight of the backend server. Requests are routed based on the load balancing algorithm configured for the backend server group and weights of backend servers.<br><br>The larger the weight is, the higher proportion of requests the backend server receives. If the weight is set to 0, the backend server will not accept new requests.<br><br><b>Constraints:</b> If <b>lb_algorithm</b> is set to <b>SOURCE_IP</b> or <b>QUIC_CID</b> , this parameter will not take effect.<br><br><b>Range:</b> 0 to 100. The default value is 1.<br><br><b>Default value:</b> N/A |
| availability_zone | No        | String  | <b>Definition:</b> Specifies the AZ of the backend server.<br><br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter can be only set for IP as backend servers. If AZ affinity is enabled for the backend server group, this parameter must be set to a valid value for IP as backend servers.</li></ul><br><b>Range:</b> AZs available for ECSs in the current region.<br><br><b>Default value:</b> N/A                                                                                                                                                                            |

## Response Parameters

**Status code:** 201

**Table 5-523** Response body parameters

| Parameter  | Type                 | Description                                                                                                                                                                          |
|------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String               | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| member     | <b>Member</b> object | <b>Definition:</b> Specifies the backend server.                                                                                                                                     |

**Table 5-524** Member

| Parameter         | Type    | Description                                                                                                                                                                                                                                            |
|-------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                | String  | <b>Definition:</b> Specifies the backend server ID.<br><b>Range:</b> N/A<br><b>NOTE</b><br>The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that is associated with the load balancer. |
| availability_zone | String  | <b>Definition:</b> Specifies the AZ where the backend server is running.<br><b>Range:</b> N/A                                                                                                                                                          |
| name              | String  | <b>Definition:</b> Specifies the backend server name.<br><b>Range:</b> N/A<br>Note: The name is not an ECS name.                                                                                                                                       |
| project_id        | String  | <b>Definition:</b> Specifies the project ID of the backend server.<br><b>Range:</b> N/A                                                                                                                                                                |
| admin_state_up    | Boolean | <b>Definition:</b> Specifies the administrative status of the backend server.<br><b>Range:</b> true or false                                                                                                                                           |

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| subnet_cidr_id | String  | <p><b>Definition:</b> Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. <b>neutron_subnet_id</b> defines IPv4 subnets, and <b>neutron_network_id</b> defines IPv6 subnets.</p> <p>You can query parameter <b>neutron_subnet_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv4 subnet ID.</p> <p>You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv6 subnet ID.</p> <p><b>Range:</b> N/A</p> |
| protocol_port  | Integer | <p><b>Definition:</b> Specifies the port used by the backend server to receive requests.</p> <p><b>Range:</b> N/A</p> <p><b>NOTE</b></p> <p>This parameter can be left blank because it does not take effect if <b>any_port_enable</b> is set to <b>true</b> for a backend server group.</p>                                                                                                                                                                                                                                                                                               |
| weight         | Integer | <p><b>Definition:</b> Specifies the weight of the backend server. Requests are routed based on the load balancing algorithm configured for the backend server group and weights of backend servers.</p> <p>The larger the weight is, the higher proportion of requests the backend server receives. If the weight is set to 0, the backend server will not accept new requests.</p> <p><b>Range:</b> 0 to 100</p>                                                                                                                                                                          |
| address        | String  | <p><b>Definition:</b> Specifies the IP address of the backend server</p> <p><b>Range:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| ip_version     | String  | <p><b>Definition:</b> Specifies the IP address version supported by the backend server. The version depends on the value of <b>address</b> returned by the system.</p> <p><b>Range:</b> v4 or v6</p>                                                                                                                                                                                                                                                                                                                                                                                       |

| Parameter        | Type                                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String                                      | <p><b>Definition:</b> Specifies the operating status of the backend server.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>INITIAL:</b> The backend server is initializing. Health check is configured for the backend server group, but no data has been reported yet.</li><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>OFFLINE:</b> The backend server is detected unhealthy, or the cloud server used as the backend server is stopped or does not exist.</li><li>• <b>UNKNOWN:</b> The health check has not started yet, or no listener is associated with the backend server group, or the member IP address is not assigned to a cloud service instance (such as ECS, network interface, or supplementary network interface).</li></ul> <p>Multiple statuses can be used for query in the format of <i>operating_status=xxx&amp;operating_status=xxx</i>.</p> |
| status           | Array of <b>MemberStatus</b> objects        | <p><b>Definition:</b> Specifies the health status of the backend server.</p> <p><b>Range:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| reason           | <b>MemberHealthCheckFailedReason</b> object | <p><b>Definition:</b> Specifies why health check fails.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| created_at       | String                                      | <p><b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'THH:mm:ss'Z'</i>.</p> <p><b>Range:</b> N/A</p> <p>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                      |
|-------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at  | String | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br><b>Note:</b> This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| member_type | String | <b>Definition:</b> Specifies the backend server type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ip:</b> IP as backend servers</li><li>• <b>instance:</b> ECSs used as backend servers</li></ul>                                                                                                                                |
| instance_id | String | <b>Definition:</b> Specifies the ID of the instance associated with the backend server. If this parameter is left blank, the backend server is not a real device. It may be an IP address.<br><b>Range:</b> N/A                                                                                                                                  |

**Table 5-525** MemberStatus

| Parameter   | Type   | Description                                                        |
|-------------|--------|--------------------------------------------------------------------|
| listener_id | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

| Parameter        | Type                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String                                               | <b>Definition:</b> Specifies the operating status of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>OFFLINE:</b> The ECS used as the backend server is stopped or does not exist.</li><li>• <b>INITIAL:</b> Initial status of the backend server when health check is enabled.</li><li>• <b>UNKNOWN:</b> The backend server group is not associated with a listener or the backend server is not associated with an ECS.</li></ul> |
| reason           | <a href="#">MemberHealthCheckFailedReason</a> object | <b>Definition:</b> Specifies why the health check fails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| created_at       | String                                               | <b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| updated_at       | String                                               | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**Table 5-526** MemberHealthCheckFailedReason

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reason_code | String | <p><b>Definition:</b> Specifies the code of the health check failures.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>CONNECT_TIMEOUT:</b> The connection with the backend server times out during a health check.</li><li>• <b>CONNECT_REFUSED:</b> The load balancer rejects connections with the backend server during a health check.</li><li>• <b>CONNECT_FAILED:</b> The load balancer fails to establish connections with the backend server during a health check.</li><li>• <b>CONNECT_INTERRUPT:</b> The load balancer is disconnected from the backend server during a health check.</li><li>• <b>SSL_HANDSHAKE_ERROR:</b> The SSL handshakes with the backend server fail during a health check.</li><li>• <b>RECV_RESPONSE_FAILED:</b> The load balancer fails to receive responses from the backend server during a health check.</li><li>• <b>RECV_RESPONSE_TIMEOUT:</b> The load balancer does not receive responses from the backend server within the timeout duration during a health check.</li><li>• <b>SEND_REQUEST_FAILED:</b> The load balancer fails to send a health check request to the backend server during a health check.</li><li>• <b>SEND_REQUEST_TIMEOUT:</b> The load balancer fails to send a health check request to the backend server within the timeout duration.</li><li>• <b>RESPONSE_FORMAT_ERROR:</b> The load balancer receives invalid responses from the backend server during a health check.</li><li>• <b>RESPONSE_MISMATCH:</b> The response code received from the</li></ul> |

| Parameter            | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |        | backend server is different from the preset code.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| expected_response    | String | <b>Definition:</b> Specifies the expected HTTP status code. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> , or <b>GRPC</b> . The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li><li>• A list of status codes that are separated with commas (,), for example, <b>200,202</b> or <b>0,1</b>. A maximum of five status codes are supported.</li><li>• A status code range. Different ranges are separated with commas (,), for example, <b>200-204,300-399</b> or <b>0-5,10-12,20-30</b>. A maximum of five ranges are supported.</li></ul> |
| healthcheck_response | String | <b>Definition:</b> Specifies the returned HTTP status code in the response. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> , or <b>GRPC</b> . The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li></ul>                                                                                                                                                                                                                                                                                                                                     |

## Example Requests

- Example 1: Adding a backend server

```
POST https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools/36ce7086-a496-4666-9064-5ba0e6840c75/members
{
```



```
"member" : {
 "subnet_cidr_id" : "c09f620e-3492-4429-ac15-445d5dd9ca74",
 "protocol_port" : 89,
 "name" : "My member",
 "address" : "120.10.10.16"
}
```

- Example 2: Adding an IP address as a backend server

POST https://{ELB\_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools/36ce7086-a496-4666-9064-5ba0e6840c75/members

```
{
 "member" : {
 "protocol_port" : 89,
 "name" : "My member",
 "address" : "120.10.10.16"
 }
}
```

## Example Responses

**Status code: 201**

Successful request.

```
{
 "member" : {
 "name" : "My member",
 "weight" : 1,
 "admin_state_up" : false,
 "subnet_cidr_id" : "c09f620e-3492-4429-ac15-445d5dd9ca74",
 "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
 "address" : "120.10.10.16",
 "protocol_port" : 89,
 "id" : "1923923e-fe8a-484f-bdbc-e11559b1f48f",
 "operating_status" : "NO_MONITOR",
 "status" : [{
 "listener_id" : "427eee03-b569-4d6c-b1f1-712032f7ec2d",
 "operating_status" : "NO_MONITOR"
 }],
 "ip_version" : "v4",
 "availability_zone" : ""
 },
 "request_id" : "f354090d-41db-41e0-89c6-7a943ec50792"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

- Example 1: Adding a backend server

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;
```

```
public class CreateMemberSolution {
 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 CreateMemberRequest request = new CreateMemberRequest();
 request.withPoolId("{pool_id}");
 CreateMemberRequestBody body = new CreateMemberRequestBody();
 CreateMemberOption memberbody = new CreateMemberOption();
 memberbody.withAddress("120.10.10.16")
 .withName("My member")
 .withProtocolPort(89)
 .withSubnetCidrId("c09f620e-3492-4429-ac15-445d5dd9ca74");
 body.withMember(memberbody);
 request.withBody(body);
 try {
 CreateMemberResponse response = client.createMember(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

- Example 2: Adding an IP address as a backend server

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CreateMemberSolution {
 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
```

```
environment
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
CreateMemberRequest request = new CreateMemberRequest();
request.withPoolId("{pool_id}");
CreateMemberRequestBody body = new CreateMemberRequestBody();
CreateMemberOption memberbody = new CreateMemberOption();
memberbody.withAddress("120.10.10.16")
 .withName("My member")
 .withProtocolPort(89);
body.withMember(memberbody);
request.withBody(body);
try {
 CreateMemberResponse response = client.createMember(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrMsg());
}
}
```

- Example 3: Adding a backend server to an IP backend server group

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CreateMemberSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);
```

```
ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
CreateMemberRequest request = new CreateMemberRequest();
request.withPoolId("{pool_id}");
CreateMemberRequestBody body = new CreateMemberRequestBody();
CreateMemberOption memberbody = new CreateMemberOption();
memberbody.withAddress("120.10.10.16")
 .withName("My IP pool member")
 .withProtocolPort(0);
body.withMember(memberbody);
request.withBody(body);
try {
 CreateMemberResponse response = client.createMember(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

- Example 1: Adding a backend server

# coding: utf-8

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateMemberRequest()
 request.pool_id = "{pool_id}"
 memberbody = CreateMemberOption(
 address="120.10.10.16",
 name="My member",
 protocol_port=89,
 subnet_cidr_id="c09f620e-3492-4429-ac15-445d5dd9ca74"
)
 }
```

```
request.body = CreateMemberRequestBody(
 member=memberbody
)
response = client.create_member(request)
print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

- Example 2: Adding an IP address as a backend server

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateMemberRequest()
 request.pool_id = "{pool_id}"
 memberbody = CreateMemberOption(
 address="120.10.10.16",
 name="My member",
 protocol_port=89
)
 request.body = CreateMemberRequestBody(
 member=memberbody
)
 response = client.create_member(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

- Example 3: Adding a backend server to an IP backend server group

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
```

```
In this example, AK and SK are stored in environment variables for authentication. Before
running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
environment
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

try:
 request = CreateMemberRequest()
 request.pool_id = "{pool_id}"
 memberbody = CreateMemberOption(
 address="120.10.10.16",
 name="My IP pool member",
 protocol_port=0
)
 request.body = CreateMemberRequestBody(
 member=memberbody
)
 response = client.create_member(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

- Example 1: Adding a backend server

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())
```

```
request := &model.CreateMemberRequest{}
request.PoolId = "{pool_id}"
nameMember:= "My member"
protocolPortMember:= int32(89)
subnetCidrIdMember:= "c09f620e-3492-4429-ac15-445d5dd9ca74"
memberbody := &model.CreateMemberOption{
 Address: "120.10.10.16",
 Name: &nameMember,
 ProtocolPort: &protocolPortMember,
 SubnetCidrId: &subnetCidrIdMember,
}
request.Body = &model.CreateMemberRequestBody{
 Member: memberbody,
}
response, err := client.CreateMember(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

- Example 2: Adding an IP address as a backend server

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.CreateMemberRequest{}
 request.PoolId = "{pool_id}"
 nameMember:= "My member"
 protocolPortMember:= int32(89)
 memberbody := &model.CreateMemberOption{
 Address: "120.10.10.16",
 Name: &nameMember,
 ProtocolPort: &protocolPortMember,
 }
 request.Body = &model.CreateMemberRequestBody{
 Member: memberbody,
 }
 response, err := client.CreateMember(request)
 if err == nil {
```

```
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

- Example 3: Adding a backend server to an IP backend server group

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.CreateMemberRequest{}
 request.PoolId = "{pool_id}"
 nameMember := "My IP pool member"
 protocolPortMember := int32(0)
 memberbody := &model.CreateMemberOption{
 Address: "120.10.10.16",
 Name: &nameMember,
 ProtocolPort: &protocolPortMember,
 }
 request.Body = &model.CreateMemberRequestBody{
 Member: memberbody,
 }
 response, err := client.CreateMember(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.



### Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 201         | Successful request. |

### Error Codes

See [Error Codes](#).

## 5.12.2 Batch Adding Backend Servers

### Function

This API is used to add backend servers to the specified backend server group in batches. You can add up to 200 backend servers at a time to a backend server group.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/pools/{pool\_id}/members/batch-add

Table 5-527 Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pool_id    | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                     |
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-528** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-529** Request body parameters

| Parameter | Mandatory | Type                                                      | Description                                                                                                           |
|-----------|-----------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| members   | Yes       | Array of <a href="#">BatchCreateMembersOption</a> objects | <b>Definition:</b> Specifies the request parameters for adding backend servers in batches.<br><b>Constraints:</b> N/A |

**Table 5-530** BatchCreateMembersOption

| Parameter         | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                            |
|-------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name              | No        | String | <b>Definition:</b> Specifies the backend server name.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                     |
| availability_zone | No        | String | <b>Definition:</b> Specifies the AZ of the backend server.<br><b>Constraints:</b> This parameter can be only set for IP as backend servers. If AZ affinity is enabled for the backend server group, this parameter must be set to a valid value for IP as backend servers.<br><b>Range:</b> AZs available for ECSs in the current region.<br><b>Default value:</b> N/A |

| Parameter     | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| address       | Yes       | String  | <b>Definition:</b> Specifies the IP address of the backend server. This IP address must be in the subnet specified by <b>subnet_cidr_id</b> , for example, 192.168.3.11.<br><b>Constraints:</b> If <b>subnet_cidr_id</b> is left blank, IP as backend servers will be added. In this case, the IP address must be an IPv4 address.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                            |
| protocol_port | Yes       | Integer | <b>Definition:</b> Specifies the port used by the backend server to receive requests.<br><b>Constraints:</b> <b>protocol_port</b> must be set to <b>0</b> for gateway load balancers with IP backend server groups associated.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br><b>NOTE</b><br>This parameter can be left blank because it does not take effect if <b>any_port_enable</b> is set to <b>true</b> for a backend server group. |

| Parameter      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| subnet_cidr_id | No        | String | <p><b>Definition:</b> Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. <b>neutron_subnet_id</b> defines IPv4 subnets, and <b>neutron_network_id</b> defines IPv6 subnets.</p> <p>You can query parameter <b>neutron_subnet_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv4 subnet ID.</p> <p>You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv6 subnet ID.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The IPv4 or IPv6 subnet must be in the same VPC as the subnet of the load balancer.</li><li>• If <b>ip_target_enable</b> is set to <b>true</b>, this parameter can be left blank, indicating that an IP as backend server will be added. In this case, IP as backend servers must use private IPv4 addresses, and the protocol of the backend server group must be TCP, UDP, TLS, HTTP, HTTPS, QUIC, or GRPC.</li><li>• If <b>ip_target_enable</b> is set to <b>false</b>, this parameter must be specified.</li><li>• This parameter must be specified for gateway load balancers with IP backend server groups. The subnet of the backend server must be in the same VPC as the load balancer.</li></ul> |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |         | <b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| weight    | No        | Integer | <b>Definition:</b> Specifies the weight of the backend server. Requests are routed based on the load balancing algorithm configured for the backend server group and weights of backend servers.<br><br>The larger the weight is, the higher proportion of requests the backend server receives. If the weight is set to 0, the backend server will not accept new requests.<br><br><b>Constraints:</b> This parameter is invalid when <b>lb_algorithm</b> is set to <b>SOURCE_IP</b> for the backend server group that contains the backend server.<br><br><b>Range:</b> 0 to 100<br><b>Default value:</b> 1 |

## Response Parameters

Status code: 201

**Table 5-531** Response body parameters

| Parameter  | Type                                | Description                                                                                                                                                                          |
|------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                              | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| members    | Array of <b>BatchMember</b> objects | <b>Definition:</b> Specifies the backend servers.                                                                                                                                    |

**Table 5-532** BatchMember

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | <b>Definition:</b> Specifies the backend server ID.<br><b>Range:</b> N/A<br><b>NOTE</b><br>The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that is associated with the load balancer.                                                                                                                                                                                                                                                                                                                  |
| name           | String  | <b>Definition:</b> Specifies the backend server name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| project_id     | String  | Specifies the ID of the project where the backend server is used.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the backend server.<br><b>Range:</b> <b>true</b> or <b>false</b>                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| subnet_cidr_id | String  | <b>Definition:</b> Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. <b>neutron_subnet_id</b> defines IPv4 subnets, and <b>neutron_network_id</b> defines IPv6 subnets.<br>You can query parameter <b>neutron_subnet_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv4 subnet ID.<br>You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv6 subnet ID.<br><b>Range:</b> N/A |
| protocol_port  | Integer | <b>Definition:</b> Specifies the port used by the backend server to receive requests.<br><b>Range:</b> N/A<br><b>NOTE</b><br>This parameter can be left blank because it does not take effect if <b>any_port_enable</b> is set to <b>true</b> for a backend server group.                                                                                                                                                                                                                                                                                               |

| Parameter        | Type                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| weight           | Integer                                              | <b>Definition:</b> Specifies the weight of the backend server. Requests are routed based on the load balancing algorithm configured for the backend server group and weights of backend servers. The larger the weight is, the higher proportion of requests the backend server receives. If the weight is set to 0, the backend server will not accept new requests.<br><b>Range:</b> 0 to 100<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| address          | String                                               | <b>Definition:</b> Specifies the IP address of the backend server<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| operating_status | String                                               | <b>Definition:</b> Specifies the operating status of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>INITIAL:</b> The backend server is initializing. Health check is configured for the backend server group, but no data has been reported yet.</li><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>OFFLINE:</b> The backend server is detected unhealthy, or the cloud server used as the backend server is stopped or does not exist.</li><li>• <b>UNKNOWN:</b> The health check has not started yet, or no listener is associated with the backend server group, or the member IP address is not assigned to a cloud service instance (such as ECS, network interface, or supplementary network interface).</li></ul> |
| reason           | <a href="#">MemberHealthCheckFailedReason</a> object | <b>Definition:</b> Specifies why the health check fails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Parameter   | Type                                 | Description                                                                                                                                                                                                                                                                                                                                     |
|-------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| status      | Array of <b>MemberStatus</b> objects | <b>Definition:</b> Specifies the health status of the backend server if <b>listener_id</b> under <b>status</b> is specified. If <b>listener_id</b> under <b>status</b> is not specified, <b>operating_status</b> of <b>member</b> takes precedence.                                                                                             |
| member_type | String                               | <b>Definition:</b> Specifies the type of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ip:</b> IP as backend servers</li><li>• <b>instance:</b> ECSs used as backend servers</li></ul>                                                                                                                        |
| instance_id | String                               | <b>Definition:</b> Specifies the ID of the instance associated with the backend server. If this parameter is left blank, the backend server is not a real device. It may be an IP address.<br><b>Range:</b> N/A                                                                                                                                 |
| port_id     | String                               | <b>Definition:</b> Specifies the ID of the VPC port bound to the IP address.<br><b>Range:</b> N/A                                                                                                                                                                                                                                               |
| ret_status  | String                               | <b>Definition:</b> Specifies the status of adding a backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>successful:</b> The backend server is added.</li><li>• <b>existed:</b> The backend server already exists.</li></ul>                                                                                             |
| created_at  | String                               | <b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br><br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |



| Parameter  | Type   | Description                                                                                                                                                                                                                                                                                                                                   |
|------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at | String | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br><br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |

**Table 5-533** MemberStatus

| Parameter        | Type                                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listener_id      | String                                      | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| operating_status | String                                      | <b>Definition:</b> Specifies the operating status of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>OFFLINE:</b> The ECS used as the backend server is stopped or does not exist.</li><li>• <b>INITIAL:</b> Initial status of the backend server when health check is enabled.</li><li>• <b>UNKNOWN:</b> The backend server group is not associated with a listener or the backend server is not associated with an ECS.</li></ul> |
| reason           | <b>MemberHealthCheckFailedReason</b> object | <b>Definition:</b> Specifies why the health check fails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| created_at       | String                                      | <b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Parameter  | Type   | Description                                                                                                                                        |
|------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at | String | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A |

**Table 5-534** MemberHealthCheckFailedReason

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reason_code | String | <p><b>Definition:</b> Specifies the code of the health check failures.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>CONNECT_TIMEOUT:</b> The connection with the backend server times out during a health check.</li><li>• <b>CONNECT_REFUSED:</b> The load balancer rejects connections with the backend server during a health check.</li><li>• <b>CONNECT_FAILED:</b> The load balancer fails to establish connections with the backend server during a health check.</li><li>• <b>CONNECT_INTERRUPT:</b> The load balancer is disconnected from the backend server during a health check.</li><li>• <b>SSL_HANDSHAKE_ERROR:</b> The SSL handshakes with the backend server fail during a health check.</li><li>• <b>RECV_RESPONSE_FAILED:</b> The load balancer fails to receive responses from the backend server during a health check.</li><li>• <b>RECV_RESPONSE_TIMEOUT:</b> The load balancer does not receive responses from the backend server within the timeout duration during a health check.</li><li>• <b>SEND_REQUEST_FAILED:</b> The load balancer fails to send a health check request to the backend server during a health check.</li><li>• <b>SEND_REQUEST_TIMEOUT:</b> The load balancer fails to send a health check request to the backend server within the timeout duration.</li><li>• <b>RESPONSE_FORMAT_ERROR:</b> The load balancer receives invalid responses from the backend server during a health check.</li><li>• <b>RESPONSE_MISMATCH:</b> The response code received from the</li></ul> |

| Parameter            | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |        | backend server is different from the preset code.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| expected_response    | String | <b>Definition:</b> Specifies the expected HTTP status code. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> , or <b>GRPC</b> . The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li><li>• A list of status codes that are separated with commas (,), for example, <b>200,202</b> or <b>0,1</b>. A maximum of five status codes are supported.</li><li>• A status code range. Different ranges are separated with commas (,), for example, <b>200-204,300-399</b> or <b>0-5,10-12,20-30</b>. A maximum of five ranges are supported.</li></ul> |
| healthcheck_response | String | <b>Definition:</b> Specifies the returned HTTP status code in the response. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> , or <b>GRPC</b> . The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li></ul>                                                                                                                                                                                                                                                                                                                                     |

## Example Requests

### Batch adding backend servers

```
POST https://{ELB_Endpoint}/v3/04dd36f964000fe22f9ac00bc85b1a1d/elb/pools/04a9bc65-b75b-478d-b4d6-e693bb61dd35/members/batch-add
```

```
{
 "members": [{
 "name": "lzs_batch_member1",
 "weight": 1,
 "address": "192.168.0.48",
 "protocol_port": 8080,
 "subnet_cidr_id": "61da8098-954b-4809-bc5a-b99ccef8a398"
 }, {
 "name": "lzs_batch_member2",
 "weight": 1,
 "address": "192.168.0.49",
 "protocol_port": 8080,
 "subnet_cidr_id": "61da8098-954b-4809-bc5a-b99ccef8a398"
 }]
}
```

## Example Responses

**Status code: 201**

Successful request.

```
{
 "request_id": "b5d8bb34d28f3e47b352c14419e8fe04",
 "members": [{
 "weight": 1,
 "admin_state_up": false,
 "project_id": "04dd36f964000fe22f9ac00bc85b1a1d",
 "address": "192.168.0.48",
 "protocol_port": 8080,
 "id": "9346ad28-6971-456a-9711-2917d023930a",
 "operating_status": "OFFLINE",
 "instance_id": "",
 "member_type": "instance",
 "port_id": "",
 "name": "batch_member1",
 "subnet_cidr_id": "61da8098-954b-4809-bc5a-b99ccef8a398",
 "ret_status": "successful"
 }, {
 "weight": 1,
 "admin_state_up": false,
 "project_id": "04dd36f964000fe22f9ac00bc85b1a1d",
 "address": "192.168.0.49",
 "protocol_port": 8080,
 "id": "94548801-1023-452f-bcf7-6174e77cb772",
 "operating_status": "OFFLINE",
 "instance_id": "",
 "member_type": "instance",
 "port_id": "",
 "name": "batch_member2",
 "subnet_cidr_id": "61da8098-954b-4809-bc5a-b99ccef8a398",
 "ret_status": "successful"
 }]
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Batch adding backend servers

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
```

```
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchCreateMembersSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 BatchCreateMembersRequest request = new BatchCreateMembersRequest();
 request.withPoolId("{pool_id}");
 BatchCreateMembersRequestBody body = new BatchCreateMembersRequestBody();
 List<BatchCreateMembersOption> listbodyMembers = new ArrayList<>();
 listbodyMembers.add(
 new BatchCreateMembersOption()
 .WithName("lzs_batch_member1")
 .withAddress("192.168.0.48")
 .withProtocolPort(8080)
 .withSubnetCidrId("61da8098-954b-4809-bc5a-b99ccef8a398")
 .withWeight(1)
);
 listbodyMembers.add(
 new BatchCreateMembersOption()
 .WithName("lzs_batch_member2")
 .withAddress("192.168.0.49")
 .withProtocolPort(8080)
 .withSubnetCidrId("61da8098-954b-4809-bc5a-b99ccef8a398")
 .withWeight(1)
);
 body.withMembers(listbodyMembers);
 request.withBody(body);
 try {
 BatchCreateMembersResponse response = client.batchCreateMembers(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrMsg());
 }
 }
}
```

```
}
}
```

## Python

### Batch adding backend servers

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = BatchCreateMembersRequest()
 request.pool_id = "{pool_id}"
 listMembersbody = [
 BatchCreateMembersOption(
 name="lzs_batch_member1",
 address="192.168.0.48",
 protocol_port=8080,
 subnet_cidr_id="61da8098-954b-4809-bc5a-b99ccef8a398",
 weight=1
),
 BatchCreateMembersOption(
 name="lzs_batch_member2",
 address="192.168.0.49",
 protocol_port=8080,
 subnet_cidr_id="61da8098-954b-4809-bc5a-b99ccef8a398",
 weight=1
)
]
 request.body = BatchCreateMembersRequestBody(
 members=listMembersbody
)
 response = client.batch_create_members(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Batch adding backend servers

```
package main
```

```
import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.BatchCreateMembersRequest{}
 request.PoolId = "{pool_id}"
 nameMembers := "lzs_batch_member1"
 subnetCidrIdMembers := "61da8098-954b-4809-bc5a-b99ccef8a398"
 weightMembers := int32(1)
 nameMembers1 := "lzs_batch_member2"
 subnetCidrIdMembers1 := "61da8098-954b-4809-bc5a-b99ccef8a398"
 weightMembers1 := int32(1)
 var listMembersbody = []model.BatchCreateMembersOption{
 {
 Name: &nameMembers,
 Address: "192.168.0.48",
 ProtocolPort: int32(8080),
 SubnetCidrId: &subnetCidrIdMembers,
 Weight: &weightMembers,
 },
 {
 Name: &nameMembers1,
 Address: "192.168.0.49",
 ProtocolPort: int32(8080),
 SubnetCidrId: &subnetCidrIdMembers1,
 Weight: &weightMembers1,
 },
 }
 request.Body = &model.BatchCreateMembersRequestBody{
 Members: listMembersbody,
 }
 response, err := client.BatchCreateMembers(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```



## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 201         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.12.3 Querying Backend Servers in a Backend Server Group

### Function

This API is used to query all backend servers in a given backend server group.

### Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query.
- Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/pools/{pool\_id}/members

**Table 5-535** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| pool_id    | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                     |

**Table 5-536** Query Parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker    | No        | String  | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| limit     | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000                                                                                                                                                                                                                                                                  |

| Parameter    | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse | No        | Boolean          | <p><b>Definition:</b> Specifies whether to use reverse query.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>true</b>: Query resources on the previous page.</li><li>• <b>false</b>: Query resources on the next page.</li></ul> <p><b>Default value:</b> false</p> |
| name         | No        | Array of strings | <p><b>Definition:</b> Specifies the backend server name. Note: The name is not an ECS name. Multiple names can be used for query in the format of <i>name=xxx&amp;name=xxx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                          |

| Parameter      | Mandatory | Type              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------|-----------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| weight         | No        | Array of integers | <p><b>Definition:</b> Specifies the weight of the backend server. Requests are routed based on the load balancing algorithm configured for the backend server group and weights of backend servers.</p> <p>The larger the weight is, the higher proportion of requests the backend server receives. If the weight is set to 0, the backend server will not accept new requests.</p> <p>Multiple weights can be used for query in the format of <i>weight=xxx&amp;weight=xxx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> 0 to 100</p> <p><b>Default value:</b> N/A</p> |
| admin_state_up | No        | Boolean           | <p><b>Definition:</b> Specifies the administrative status of the backend server.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> true or false</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                            |
| subnet_cidr_id | No        | Array of strings  | <p><b>Definition:</b> Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides.</p> <p>Multiple IDs can be used for query in the format of <i>subnet_cidr_id=xxx&amp;subnet_cidr_id=xxx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                      |

| Parameter     | Mandatory | Type              | Description                                                                                                                                                                                                                                                                  |
|---------------|-----------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| address       | No        | Array of strings  | <b>Definition:</b> Specifies the IPv4 or IPv6 address bound to the backend server.<br>Multiple IP addresses can be used for query in the format of <i>address=xxx&amp;address=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A         |
| protocol_port | No        | Array of integers | <b>Definition:</b> Specifies the port used by the backend server to receive requests.<br>Multiple ports can be used for query in the format of <i>protocol_port=xxx&amp;protocol_port=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| id            | No        | Array of strings  | <b>Definition:</b> Specifies the backend server ID.<br>Multiple IDs can be used for query in the format of <i>id=xxx&amp;id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                           |

| Parameter        | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | No        | Array of strings | <p><b>Definition:</b> Specifies the operating status of the backend server.</p> <p>Multiple operating statuses can be used for query in the format of <i>operating_status=xxx&amp;operating_status=xxx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>INITIAL:</b> The backend server is initializing. Health check is configured for the backend server group, but no data has been reported yet.</li><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>OFFLINE:</b> The backend server is detected unhealthy, or the cloud server used as the backend server is stopped or does not exist.</li><li>• <b>UNKNOWN:</b> The health check has not started yet, or no listener is associated with the backend server group, or the member IP address is not assigned to a cloud service instance (such as ECS, network interface, or supplementary network interface).</li></ul> <p><b>Default value:</b> N/A</p> |

| Parameter             | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | Array of strings | <p><b>Definition:</b> Specifies the ID of the enterprise project.</p> <p>Multiple values can be used for query in the format of: <i>enterprise_project_id=xxx&amp;enterprise_project_id=xxx</i>.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enterprise_project_id</b> is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:members:list</b> permission must be assigned to the user group.</li><li>• If <b>enterprise_project_id</b> is specified, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:members:list</b> permission are queried.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |
| ip_version            | No        | Array of strings | <p><b>Definition:</b> Specifies the IP version supported by the backend server.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> <b>v4</b> (IPv4) or <b>v6</b> (IPv6)</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

| Parameter         | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_type       | No        | Array of strings | <b>Definition:</b> Specifies the type of the backend server. Multiple values can be used for query in the format of <i>member_type=xxx&amp;member_type=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ip:</b> IP as backend servers</li><li>• <b>instance:</b> ECSs used as backend servers</li></ul> <b>Default value:</b> N/A |
| instance_id       | No        | Array of strings | <b>Definition:</b> Specifies the ID of the instance associated with the backend server. If this parameter is left blank, the backend server is not an ECS. It may be an IP address.<br>Multiple instance IDs can be used for query in the format of <i>instance_id=xxx&amp;instance_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A     |
| availability_zone | No        | Array of strings | <b>Definition:</b> Specifies the backend server AZ.<br>Multiple values can be used for query in the format of <i>availability_zone=xxx&amp;availability_zone=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                               |



## Request Parameters

**Table 5-537** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-538** Response body parameters

| Parameter  | Type                                    | Description                                                                                                                                                                          |
|------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                                  | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| page_info  | <a href="#">PageInfo</a> object         | <b>Definition:</b> Specifies the pagination information.                                                                                                                             |
| members    | Array of <a href="#">Member</a> objects | <b>Definition:</b> Specifies the backend servers.                                                                                                                                    |

**Table 5-539** PageInfo

| Parameter       | Type   | Description                                                                                                                                                                                                                          |
|-----------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |
| next_marker     | String | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A                                                                  |

| Parameter     | Type    | Description                                                                                           |
|---------------|---------|-------------------------------------------------------------------------------------------------------|
| current_count | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A |

**Table 5-540** Member

| Parameter         | Type    | Description                                                                                                                                                                                                                                            |
|-------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                | String  | <b>Definition:</b> Specifies the backend server ID.<br><b>Range:</b> N/A<br><b>NOTE</b><br>The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that is associated with the load balancer. |
| availability_zone | String  | <b>Definition:</b> Specifies the AZ where the backend server is running.<br><b>Range:</b> N/A                                                                                                                                                          |
| name              | String  | <b>Definition:</b> Specifies the backend server name.<br><b>Range:</b> N/A<br>Note: The name is not an ECS name.                                                                                                                                       |
| project_id        | String  | <b>Definition:</b> Specifies the project ID of the backend server.<br><b>Range:</b> N/A                                                                                                                                                                |
| admin_state_up    | Boolean | <b>Definition:</b> Specifies the administrative status of the backend server.<br><b>Range:</b> true or false                                                                                                                                           |

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| subnet_cidr_id | String  | <p><b>Definition:</b> Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. <b>neutron_subnet_id</b> defines IPv4 subnets, and <b>neutron_network_id</b> defines IPv6 subnets.</p> <p>You can query parameter <b>neutron_subnet_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv4 subnet ID.</p> <p>You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv6 subnet ID.</p> <p><b>Range:</b> N/A</p> |
| protocol_port  | Integer | <p><b>Definition:</b> Specifies the port used by the backend server to receive requests.</p> <p><b>Range:</b> N/A</p> <p><b>NOTE</b></p> <p>This parameter can be left blank because it does not take effect if <b>any_port_enable</b> is set to <b>true</b> for a backend server group.</p>                                                                                                                                                                                                                                                                                               |
| weight         | Integer | <p><b>Definition:</b> Specifies the weight of the backend server. Requests are routed based on the load balancing algorithm configured for the backend server group and weights of backend servers.</p> <p>The larger the weight is, the higher proportion of requests the backend server receives. If the weight is set to 0, the backend server will not accept new requests.</p> <p><b>Range:</b> 0 to 100</p>                                                                                                                                                                          |
| address        | String  | <p><b>Definition:</b> Specifies the IP address of the backend server</p> <p><b>Range:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| ip_version     | String  | <p><b>Definition:</b> Specifies the IP address version supported by the backend server. The version depends on the value of <b>address</b> returned by the system.</p> <p><b>Range:</b> v4 or v6</p>                                                                                                                                                                                                                                                                                                                                                                                       |

| Parameter        | Type                                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String                                      | <b>Definition:</b> Specifies the operating status of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>INITIAL:</b> The backend server is initializing. Health check is configured for the backend server group, but no data has been reported yet.</li><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>OFFLINE:</b> The backend server is detected unhealthy, or the cloud server used as the backend server is stopped or does not exist.</li><li>• <b>UNKNOWN:</b> The health check has not started yet, or no listener is associated with the backend server group, or the member IP address is not assigned to a cloud service instance (such as ECS, network interface, or supplementary network interface).</li></ul> Multiple statuses can be used for query in the format of <i>operating_status=xxx&amp;operating_status=xxx</i> . |
| status           | Array of <b>MemberStatus</b> objects        | <b>Definition:</b> Specifies the health status of the backend server.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| reason           | <b>MemberHealthCheckFailedReason</b> object | <b>Definition:</b> Specifies why health check fails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| created_at       | String                                      | <b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'THH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                      |
|-------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at  | String | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br><b>Note:</b> This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| member_type | String | <b>Definition:</b> Specifies the backend server type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ip:</b> IP as backend servers</li><li>• <b>instance:</b> ECSs used as backend servers</li></ul>                                                                                                                                |
| instance_id | String | <b>Definition:</b> Specifies the ID of the instance associated with the backend server. If this parameter is left blank, the backend server is not a real device. It may be an IP address.<br><b>Range:</b> N/A                                                                                                                                  |

**Table 5-541** MemberStatus

| Parameter   | Type   | Description                                                        |
|-------------|--------|--------------------------------------------------------------------|
| listener_id | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

| Parameter        | Type                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String                                               | <b>Definition:</b> Specifies the operating status of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>OFFLINE:</b> The ECS used as the backend server is stopped or does not exist.</li><li>• <b>INITIAL:</b> Initial status of the backend server when health check is enabled.</li><li>• <b>UNKNOWN:</b> The backend server group is not associated with a listener or the backend server is not associated with an ECS.</li></ul> |
| reason           | <a href="#">MemberHealthCheckFailedReason</a> object | <b>Definition:</b> Specifies why the health check fails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| created_at       | String                                               | <b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| updated_at       | String                                               | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**Table 5-542** MemberHealthCheckFailedReason

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reason_code | String | <p><b>Definition:</b> Specifies the code of the health check failures.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>CONNECT_TIMEOUT:</b> The connection with the backend server times out during a health check.</li><li>• <b>CONNECT_REFUSED:</b> The load balancer rejects connections with the backend server during a health check.</li><li>• <b>CONNECT_FAILED:</b> The load balancer fails to establish connections with the backend server during a health check.</li><li>• <b>CONNECT_INTERRUPT:</b> The load balancer is disconnected from the backend server during a health check.</li><li>• <b>SSL_HANDSHAKE_ERROR:</b> The SSL handshakes with the backend server fail during a health check.</li><li>• <b>RECV_RESPONSE_FAILED:</b> The load balancer fails to receive responses from the backend server during a health check.</li><li>• <b>RECV_RESPONSE_TIMEOUT:</b> The load balancer does not receive responses from the backend server within the timeout duration during a health check.</li><li>• <b>SEND_REQUEST_FAILED:</b> The load balancer fails to send a health check request to the backend server during a health check.</li><li>• <b>SEND_REQUEST_TIMEOUT:</b> The load balancer fails to send a health check request to the backend server within the timeout duration.</li><li>• <b>RESPONSE_FORMAT_ERROR:</b> The load balancer receives invalid responses from the backend server during a health check.</li><li>• <b>RESPONSE_MISMATCH:</b> The response code received from the</li></ul> |

| Parameter            | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |        | backend server is different from the preset code.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| expected_response    | String | <b>Definition:</b> Specifies the expected HTTP status code. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> , or <b>GRPC</b> . The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li><li>• A list of status codes that are separated with commas (,), for example, <b>200,202</b> or <b>0,1</b>. A maximum of five status codes are supported.</li><li>• A status code range. Different ranges are separated with commas (,), for example, <b>200-204,300-399</b> or <b>0-5,10-12,20-30</b>. A maximum of five ranges are supported.</li></ul> |
| healthcheck_response | String | <b>Definition:</b> Specifies the returned HTTP status code in the response. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> , or <b>GRPC</b> . The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li></ul>                                                                                                                                                                                                                                                                                                                                     |

## Example Requests

Querying backend servers in a given backend server group

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools/36ce7086-a496-4666-9064-5ba0e6840c75/members
```



## Example Responses

**Status code: 200**

Successful request.

```
{
 "members": [{
 "name": "quark-neutron",
 "weight": 100,
 "admin_state_up": false,
 "subnet_cidr_id": "c09f620e-3492-4429-ac15-445d5dd9ca74",
 "project_id": "99a3fff0d03c428eac3678da6a7d0f24",
 "address": "120.10.10.2",
 "protocol_port": 2100,
 "id": "0aa23a52-1ac2-4a2d-8dfa-1e11cb26079d",
 "operating_status": "NO_MONITOR",
 "ip_version": "v4",
 "availability_zone": "az1"
 }, {
 "name": "quark-neutron",
 "weight": 100,
 "admin_state_up": false,
 "subnet_cidr_id": "c09f620e-3492-4429-ac15-445d5dd9ca74",
 "project_id": "99a3fff0d03c428eac3678da6a7d0f24",
 "address": "120.10.10.2",
 "protocol_port": 2101,
 "id": "315b928b-39e4-4d5f-8e48-39e9108c1035",
 "operating_status": "NO_MONITOR",
 "ip_version": "v4",
 "availability_zone": "az2"
 }, {
 "name": "quark-neutron",
 "weight": 100,
 "admin_state_up": false,
 "subnet_cidr_id": "27e4ab69-a5ed-46c6-921a-5212be19ce87",
 "project_id": "99a3fff0d03c428eac3678da6a7d0f24",
 "address": "2001:db8:a583:6a::4",
 "protocol_port": 2101,
 "id": "53976f72-d2aa-47f5-baf4-4906ed6b42d6",
 "operating_status": "NO_MONITOR",
 "ip_version": "v6",
 "availability_zone": "az2"
 }],
 "page_info": {
 "previous_marker": "0aa23a52-1ac2-4a2d-8dfa-1e11cb26079d",
 "current_count": 3
 },
 "request_id": "87e29592-7ab8-401a-9bf4-66cf6747eab9"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;
```

```
public class ListMembersSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ListMembersRequest request = new ListMembersRequest();
 request.withPoolId("{pool_id}");
 try {
 ListMembersResponse response = client.listMembers(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.getenv("CLOUD_SDK_AK")
 sk = os.getenv("CLOUD_SDK_SK")
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()
```

```
try:
 request = ListMembersRequest()
 request.pool_id = "{pool_id}"
 response = client.list_members(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ListMembersRequest{}
 request.PoolId = "{pool_id}"
 response, err := client.ListMembers(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.12.4 Querying Backend Servers in a Project

### Function

This API is used to query the backend servers under the current project.

### Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query.
- Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/members

**Table 5-543** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

**Table 5-544** Query Parameters

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker       | No        | String  | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                               |
| limit        | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000                                                                                                                                                                                                                                                                                                                                                                                                                                |
| page_reverse | No        | Boolean | <b>Definition:</b> Specifies whether to use reverse query.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Query resources on the previous page.</li><li>• <b>false:</b> Query resources on the next page.</li></ul> <b>Default value:</b> false |

| Parameter      | Mandatory | Type              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------|-----------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name           | No        | Array of strings  | <b>Definition:</b> Specifies the backend server name.<br>Multiple names can be used for query in the format of <i>name=xxx&amp;name=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                               |
| weight         | No        | Array of integers | <b>Definition:</b> Specifies the weight of the backend server. Requests are routed to backend servers in the same backend server group based on their weights.<br>If the weight is set to 0, the backend server will not accept new requests.<br>This parameter is invalid when <b>lb_algorithm</b> is set to <b>SOURCE_IP</b> for the backend server group that contains the backend server.<br>Multiple weights can be used for query in the format of <i>weight=xxx&amp;weight=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| admin_state_up | No        | Boolean           | <b>Definition:</b> Specifies the administrative status of the backend server.<br>Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether ECSs exist. If ECSs exist, the value is <b>true</b> . Otherwise, the value is <b>false</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <b>true</b> or <b>false</b><br><b>Default value:</b> N/A                                                                                                                                                        |

| Parameter      | Mandatory | Type              | Description                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------|-----------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| subnet_cidr_id | No        | Array of strings  | <b>Definition:</b> Specifies the ID of the subnet where the backend server works. This subnet must be in the same VPC as the subnet of the load balancer associated with the backend server. Only IPv4 subnets are supported.<br><br>Multiple IDs can be used for query in the format of <i>subnet_cidr_id=xxx&amp;subnet_cidr_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| address        | No        | Array of strings  | <b>Definition:</b> Specifies the IP address of the backend server. This IP address must be in the subnet specified by <b>subnet_cidr_id</b> , for example, 192.168.3.11.<br><br>Multiple IP addresses can be used for query in the format of <i>address=xxx&amp;address=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                           |
| protocol_port  | No        | Array of integers | <b>Definition:</b> Specifies the port used by the backend servers.<br><br>Multiple ports can be used for query in the format of <i>protocol_port=xxx&amp;protocol_port=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                            |

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                        |
|-----------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | No        | Array of strings | <b>Definition:</b> Specifies the backend server ID.<br>Multiple IDs can be used for query in the format of <i>id=xxx&amp;id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |



| Parameter        | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | No        | Array of strings | <p><b>Definition:</b> Specifies the operating status of the backend server.</p> <p>Multiple statuses can be used for query in the format of <i>operating_status=xxx&amp;operating_status=xxx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>INITIAL:</b> The backend server is initializing. Health check is configured for the backend server group, but no data has been reported yet.</li><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>OFFLINE:</b> The backend server is detected unhealthy, or the cloud server used as the backend server is stopped or does not exist.</li><li>• <b>UNKNOWN:</b> The health check has not started yet, or no listener is associated with the backend server group, or the member IP address is not assigned to a cloud service instance (such as ECS, network interface, or supplementary network interface).</li></ul> <p><b>Default value:</b> N/A</p> |

| Parameter             | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | Array of strings | <p><b>Definition:</b> Specifies the ID of the enterprise project.</p> <p>Multiple values can be used for query in the format of <i>enterprise_project_id=xxx&amp;enterprise_project_id=xxx</i>.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enterprise_project_id</b> is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:members:list</b> permission must be assigned to the user group.</li><li>• If <b>enterprise_project_id</b> is specified, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:members:list</b> permission are queried.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |
| ip_version            | No        | Array of strings | <p><b>Definition:</b> Specifies the IP address version.</p> <p>Multiple versions can be used for query in the format of <i>ip_version=xxx&amp;ip_version=xxx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> v4 or v6</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Parameter       | Mandatory | Type             | Description                                                                                                                                                                                                                                                                   |
|-----------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pool_id         | No        | Array of strings | <b>Definition:</b> Specifies the ID of the backend server group to which the backend server belongs.<br>Multiple IDs can be used for query in the format of <i>pool_id=xxx&amp;pool_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| loadbalancer_id | No        | Array of strings | <b>Definition:</b> Specifies the ID of the load balancer.<br>Multiple IDs can be used for query in the format of <i>loadbalancer_id=xxx&amp;loadbalancer_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                            |

## Request Parameters

**Table 5-545** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-546** Response body parameters

| Parameter  | Type                               | Description                                                                                                                                                                          |
|------------|------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                             | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| page_info  | <b>PageInfo</b> object             | <b>Definition:</b> Specifies the pagination information.                                                                                                                             |
| members    | Array of <b>MemberInfo</b> objects | <b>Definition:</b> Specifies the backend servers.                                                                                                                                    |

**Table 5-547** PageInfo

| Parameter       | Type    | Description                                                                                                                                                                                                                          |
|-----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String  | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |
| next_marker     | String  | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A                                                                  |
| current_count   | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A                                                                                                                                |

**Table 5-548** MemberInfo

| Parameter | Type   | Description                                                                                                                                                                                                                                            |
|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the backend server ID.<br><b>Range:</b> N/A<br><b>NOTE</b><br>The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that is associated with the load balancer. |

| Parameter         | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| availability_zone | String  | Specifies the AZ where the backend server is running.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| name              | String  | <b>Definition:</b> Specifies the backend server name.<br><b>Range:</b> N/A<br>Note: The name is not an ECS name.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| project_id        | String  | Specifies the ID of the project where the backend server is used.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| pool_id           | String  | <b>Definition:</b> Specifies the ID of the backend server group to which the backend server belongs.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                                                                                                                                                                                       |
| admin_state_up    | Boolean | <b>Definition:</b> Specifies the administrative status of the backend server.<br>Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether ECSs exist. If ECSs exist, the value is <b>true</b> . Otherwise, the value is <b>false</b> .<br><b>Range:</b> <b>true</b> or <b>false</b>                                                                                                                                                                                                               |
| subnet_cidr_id    | String  | <b>Definition:</b> Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. <b>neutron_subnet_id</b> defines IPv4 subnets, and <b>neutron_network_id</b> defines IPv6 subnets.<br>You can query parameter <b>neutron_subnet_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv4 subnet ID.<br>You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv6 subnet ID.<br><b>Range:</b> N/A |

| Parameter     | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol_port | Integer | <b>Definition:</b> Specifies the port used by the backend server to receive requests.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                          |
| weight        | Integer | <b>Definition:</b> Specifies the weight of the backend server. Requests are routed based on the load balancing algorithm configured for the backend server group and weights of backend servers.<br>The larger the weight is, the higher proportion of requests the backend server receives. If the weight is set to 0, the backend server will not accept new requests.<br><b>Range:</b> 0 to 100                                                                                  |
| address       | String  | <b>Definition:</b> Specifies the IP address bound to the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• If <b>subnet_cidr_id</b> is left blank, IP as backend servers will be added. In this case, the IP address must be an IPv4 address.</li><li>• If <b>subnet_cidr_id</b> is not left blank, ECSs, BMSs, or supplementary network interfaces will be added as backend servers. It must be in the subnet specified by <b>subnet_cidr_id</b>.</li></ul> |
| ip_version    | String  | <b>Definition:</b> Specifies the IP address version supported by the backend server. The version depends on the value of <b>address</b> returned by the system.<br><b>Range:</b> v4 or v6                                                                                                                                                                                                                                                                                           |

| Parameter    | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| device_owner | String | <p><b>Definition:</b> Specifies whether the backend server is associated with an ECS.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If this parameter is left blank, the backend server is not associated with an ECS.</li><li>• If the value is <b>compute:{az_name}</b>, the backend server is associated with an ECS. <b>{az_name}</b> indicates the AZ where the ECS resides.</li><li>• If the value is <b>compute:subeni</b>, supplementary network interfaces are added as backend servers.</li></ul> <p>This parameter is unsupported. Please do not use it.</p> |
| device_id    | String | <p><b>Definition:</b> Specifies the ID of the ECS with which the backend server is associated. If this parameter is left blank, the backend server is not associated with an ECS.</p> <p><b>Range:</b> N/A</p> <p>This parameter is unsupported. Please do not use it.</p>                                                                                                                                                                                                                                                                                                                 |

| Parameter        | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------|--------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String                               | <b>Definition:</b> Specifies the operating status of the backend server if <b>listener_id</b> under <b>status</b> is not specified.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>INITIAL:</b> The backend server is initializing. Health check is configured for the backend server group, but no data has been reported yet.</li><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>OFFLINE:</b> The backend server is detected unhealthy, or the cloud server used as the backend server is stopped or does not exist.</li><li>• <b>UNKNOWN:</b> The health check has not started yet, or no listener is associated with the backend server group, or the member IP address is not assigned to a cloud service instance (such as ECS, network interface, or supplementary network interface).</li></ul> |
| status           | Array of <b>MemberStatus</b> objects | <b>Definition:</b> Specifies the health status of the backend server if <b>listener_id</b> under <b>status</b> is specified. If <b>listener_id</b> under <b>status</b> is not specified, <b>operating_status</b> of <b>member</b> takes precedence.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| loadbalancer_id  | String                               | <b>Definition:</b> Specifies the ID of the load balancer.<br><br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| loadbalancers    | Array of <b>ResourceID</b> objects   | <b>Definition:</b> Specifies the IDs of the load balancers associated with the backend server.<br><br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



| Parameter   | Type                                        | Description                                                                                                                                                                                                                                                                                                                                 |
|-------------|---------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| created_at  | String                                      | <b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| updated_at  | String                                      | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.   |
| member_type | String                                      | <b>Definition:</b> Specifies the type of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ip:</b> IP as backend servers</li><li>• <b>instance:</b> ECSs used as backend servers</li></ul>                                                                                                                    |
| instance_id | String                                      | <b>Definition:</b> Specifies the ID of the instance associated with the backend server. If this parameter is left blank, the backend server is not a real device. It may be an IP address.<br><b>Range:</b> N/A                                                                                                                             |
| reason      | <b>MemberHealthCheckFailedReason</b> object | <b>Definition:</b> Specifies why health check fails.                                                                                                                                                                                                                                                                                        |

**Table 5-549** MemberStatus

| Parameter   | Type   | Description                                                        |
|-------------|--------|--------------------------------------------------------------------|
| listener_id | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

| Parameter        | Type                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String                                               | <b>Definition:</b> Specifies the operating status of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>OFFLINE:</b> The ECS used as the backend server is stopped or does not exist.</li><li>• <b>INITIAL:</b> Initial status of the backend server when health check is enabled.</li><li>• <b>UNKNOWN:</b> The backend server group is not associated with a listener or the backend server is not associated with an ECS.</li></ul> |
| reason           | <a href="#">MemberHealthCheckFailedReason</a> object | <b>Definition:</b> Specifies why the health check fails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| created_at       | String                                               | <b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| updated_at       | String                                               | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**Table 5-550** ResourceID

| Parameter | Type   | Description                                   |
|-----------|--------|-----------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the resource ID. |

**Table 5-551** MemberHealthCheckFailedReason

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reason_code | String | <p><b>Definition:</b> Specifies the code of the health check failures.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>CONNECT_TIMEOUT:</b> The connection with the backend server times out during a health check.</li><li>• <b>CONNECT_REFUSED:</b> The load balancer rejects connections with the backend server during a health check.</li><li>• <b>CONNECT_FAILED:</b> The load balancer fails to establish connections with the backend server during a health check.</li><li>• <b>CONNECT_INTERRUPT:</b> The load balancer is disconnected from the backend server during a health check.</li><li>• <b>SSL_HANDSHAKE_ERROR:</b> The SSL handshakes with the backend server fail during a health check.</li><li>• <b>RECV_RESPONSE_FAILED:</b> The load balancer fails to receive responses from the backend server during a health check.</li><li>• <b>RECV_RESPONSE_TIMEOUT:</b> The load balancer does not receive responses from the backend server within the timeout duration during a health check.</li><li>• <b>SEND_REQUEST_FAILED:</b> The load balancer fails to send a health check request to the backend server during a health check.</li><li>• <b>SEND_REQUEST_TIMEOUT:</b> The load balancer fails to send a health check request to the backend server within the timeout duration.</li><li>• <b>RESPONSE_FORMAT_ERROR:</b> The load balancer receives invalid responses from the backend server during a health check.</li><li>• <b>RESPONSE_MISMATCH:</b> The response code received from the</li></ul> |

| Parameter            | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |        | backend server is different from the preset code.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| expected_response    | String | <b>Definition:</b> Specifies the expected HTTP status code. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> , or <b>GRPC</b> . The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li><li>• A list of status codes that are separated with commas (,), for example, <b>200,202</b> or <b>0,1</b>. A maximum of five status codes are supported.</li><li>• A status code range. Different ranges are separated with commas (,), for example, <b>200-204,300-399</b> or <b>0-5,10-12,20-30</b>. A maximum of five ranges are supported.</li></ul> |
| healthcheck_response | String | <b>Definition:</b> Specifies the returned HTTP status code in the response. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> , or <b>GRPC</b> . The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li></ul>                                                                                                                                                                                                                                                                                                                                     |

## Example Requests

Querying all backend servers under the current project

```
GET https://{ELB_Endpoint}/v3/7a9941d34fc1497d8d0797429ecfd354/elb/members
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "request_id": "9bd54b2c-b6c6-4635-9495-dd89bdd917ad",
 "members": [{
 "name": "member-1",
 "weight": 1,
 "admin_state_up": true,
 "project_id": "86f9bb15ce80442680229fcd4dc96582",
 "address": "192.168.0.157",
 "protocol_port": 80,
 "id": "f5e20309-c79c-470c-b59c-3c8378792897",
 "operating_status": "ONLINE",
 "status": [{
 "listener_id": "0663b12d-4a8f-4ee1-8ba2-dd09f2c92ef7",
 "operating_status": "ONLINE"
 }, {
 "listener_id": "19ac6a54-336f-44ce-9679-50c4f56e9407",
 "operating_status": "ONLINE"
 }],
 "instance_id": "39b7d471-fbb4-4e6d-ac81-635b4415a27f",
 "device_id": "39b7d471-fbb4-4e6d-ac81-635b4415a27f",
 "device_owner": "compute:az1",
 "member_type": "instance",
 "created_at": "2023-05-04T06:55:33Z",
 "updated_at": "2023-05-08T01:34:02Z",
 "loadbalancer_id": "9eafbe79-4d48-46f6-95e6-0bc3da57b96d",
 "loadbalancers": [{
 "id": "9eafbe79-4d48-46f6-95e6-0bc3da57b96d"
 }],
 "pool_id": "46cd9381-3d99-4e32-b799-efaf5c274586",
 "ip_version": "v4",
 "subnet_cidr_id": "1aee2ab8-f238-4c26-8659-2a7a0c201d0a"
 }, {
 "name": "member-2",
 "admin_state_up": true,
 "project_id": "86f9bb15ce80442680229fcd4dc96582",
 "address": "192.168.0.157",
 "protocol_port": 80,
 "id": "f834d6c6-b376-4031-931e-57cb36bca4a8",
 "operating_status": "OFFLINE",
 "status": [],
 "instance_id": "39b7d471-fbb4-4e6d-ac81-635b4415a27f",
 "device_id": "39b7d471-fbb4-4e6d-ac81-635b4415a27f",
 "device_owner": "compute:az1",
 "member_type": "instance",
 "created_at": "2023-05-04T12:46:55Z",
 "updated_at": "2023-05-05T03:56:40Z",
 "loadbalancers": [],
 "pool_id": "d17d07db-5bab-4a15-aa6f-8561af133ca7",
 "ip_version": "v4",
 "subnet_cidr_id": "1aee2ab8-f238-4c26-8659-2a7a0c201d0a"
 }],
 "page_info": {
 "next_marker": "fb1ce58f-2525-4bd9-9606-10851533bd22",
 "previous_marker": "fb19f821-5d5f-4d72-b11c-503e874d3915",
 "current_count": 2
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.

## Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListAllMembersSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ListAllMembersRequest request = new ListAllMembersRequest();
 try {
 ListAllMembersResponse response = client.listAllMembers(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
```

```
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

try:
 request = ListAllMembersRequest()
 response = client.list_all_members(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ListAllMembersRequest{}
 response, err := client.ListAllMembers(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.12.5 Viewing the Details of a Backend Server

### Function

This API is used to view the details of a backend server.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/pools/{pool\_id}/members/{member\_id}

**Table 5-552** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| pool_id    | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                     |



| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                             |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_id | Yes       | String | Specifies the backend server ID.<br><br>Note: The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that has already been associated with the load balancer. |

## Request Parameters

**Table 5-553** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-554** Response body parameters

| Parameter  | Type                 | Description                                                                                                                                                                          |
|------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String               | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| member     | <b>Member</b> object | <b>Definition:</b> Specifies the backend server.                                                                                                                                     |

Table 5-555 Member

| Parameter         | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                | String  | <b>Definition:</b> Specifies the backend server ID.<br><b>Range:</b> N/A<br><b>NOTE</b><br>The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that is associated with the load balancer.                                                                                                                                                                                                                                                                                                                  |
| availability_zone | String  | <b>Definition:</b> Specifies the AZ where the backend server is running.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| name              | String  | <b>Definition:</b> Specifies the backend server name.<br><b>Range:</b> N/A<br>Note: The name is not an ECS name.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| project_id        | String  | <b>Definition:</b> Specifies the project ID of the backend server.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| admin_state_up    | Boolean | <b>Definition:</b> Specifies the administrative status of the backend server.<br><b>Range:</b> true or false                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| subnet_cidr_id    | String  | <b>Definition:</b> Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. <b>neutron_subnet_id</b> defines IPv4 subnets, and <b>neutron_network_id</b> defines IPv6 subnets.<br>You can query parameter <b>neutron_subnet_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv4 subnet ID.<br>You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv6 subnet ID.<br><b>Range:</b> N/A |

| Parameter     | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol_port | Integer | <b>Definition:</b> Specifies the port used by the backend server to receive requests.<br><b>Range:</b> N/A<br><b>NOTE</b><br>This parameter can be left blank because it does not take effect if <b>any_port_enable</b> is set to <b>true</b> for a backend server group.                                                                                                                          |
| weight        | Integer | <b>Definition:</b> Specifies the weight of the backend server. Requests are routed based on the load balancing algorithm configured for the backend server group and weights of backend servers.<br>The larger the weight is, the higher proportion of requests the backend server receives. If the weight is set to 0, the backend server will not accept new requests.<br><b>Range:</b> 0 to 100 |
| address       | String  | <b>Definition:</b> Specifies the IP address of the backend server<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                             |
| ip_version    | String  | <b>Definition:</b> Specifies the IP address version supported by the backend server. The version depends on the value of <b>address</b> returned by the system.<br><b>Range:</b> v4 or v6                                                                                                                                                                                                          |

| Parameter        | Type                                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String                                      | <p><b>Definition:</b> Specifies the operating status of the backend server.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>INITIAL:</b> The backend server is initializing. Health check is configured for the backend server group, but no data has been reported yet.</li><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>OFFLINE:</b> The backend server is detected unhealthy, or the cloud server used as the backend server is stopped or does not exist.</li><li>• <b>UNKNOWN:</b> The health check has not started yet, or no listener is associated with the backend server group, or the member IP address is not assigned to a cloud service instance (such as ECS, network interface, or supplementary network interface).</li></ul> <p>Multiple statuses can be used for query in the format of <i>operating_status=xxx&amp;operating_status=xxx</i>.</p> |
| status           | Array of <b>MemberStatus</b> objects        | <p><b>Definition:</b> Specifies the health status of the backend server.</p> <p><b>Range:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| reason           | <b>MemberHealthCheckFailedReason</b> object | <p><b>Definition:</b> Specifies why health check fails.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| created_at       | String                                      | <p><b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'THH:mm:ss'Z'</i>.</p> <p><b>Range:</b> N/A</p> <p>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                      |
|-------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at  | String | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br><b>Note:</b> This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| member_type | String | <b>Definition:</b> Specifies the backend server type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ip:</b> IP as backend servers</li><li>• <b>instance:</b> ECSs used as backend servers</li></ul>                                                                                                                                |
| instance_id | String | <b>Definition:</b> Specifies the ID of the instance associated with the backend server. If this parameter is left blank, the backend server is not a real device. It may be an IP address.<br><b>Range:</b> N/A                                                                                                                                  |

**Table 5-556** MemberStatus

| Parameter   | Type   | Description                                                        |
|-------------|--------|--------------------------------------------------------------------|
| listener_id | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

| Parameter        | Type                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String                                               | <b>Definition:</b> Specifies the operating status of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>OFFLINE:</b> The ECS used as the backend server is stopped or does not exist.</li><li>• <b>INITIAL:</b> Initial status of the backend server when health check is enabled.</li><li>• <b>UNKNOWN:</b> The backend server group is not associated with a listener or the backend server is not associated with an ECS.</li></ul> |
| reason           | <a href="#">MemberHealthCheckFailedReason</a> object | <b>Definition:</b> Specifies why the health check fails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| created_at       | String                                               | <b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| updated_at       | String                                               | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**Table 5-557** MemberHealthCheckFailedReason

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reason_code | String | <p><b>Definition:</b> Specifies the code of the health check failures.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>CONNECT_TIMEOUT:</b> The connection with the backend server times out during a health check.</li><li>• <b>CONNECT_REFUSED:</b> The load balancer rejects connections with the backend server during a health check.</li><li>• <b>CONNECT_FAILED:</b> The load balancer fails to establish connections with the backend server during a health check.</li><li>• <b>CONNECT_INTERRUPT:</b> The load balancer is disconnected from the backend server during a health check.</li><li>• <b>SSL_HANDSHAKE_ERROR:</b> The SSL handshakes with the backend server fail during a health check.</li><li>• <b>RECV_RESPONSE_FAILED:</b> The load balancer fails to receive responses from the backend server during a health check.</li><li>• <b>RECV_RESPONSE_TIMEOUT:</b> The load balancer does not receive responses from the backend server within the timeout duration during a health check.</li><li>• <b>SEND_REQUEST_FAILED:</b> The load balancer fails to send a health check request to the backend server during a health check.</li><li>• <b>SEND_REQUEST_TIMEOUT:</b> The load balancer fails to send a health check request to the backend server within the timeout duration.</li><li>• <b>RESPONSE_FORMAT_ERROR:</b> The load balancer receives invalid responses from the backend server during a health check.</li><li>• <b>RESPONSE_MISMATCH:</b> The response code received from the</li></ul> |

| Parameter            | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |        | backend server is different from the preset code.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| expected_response    | String | <b>Definition:</b> Specifies the expected HTTP status code. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> , or <b>GRPC</b> . The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li><li>• A list of status codes that are separated with commas (,), for example, <b>200,202</b> or <b>0,1</b>. A maximum of five status codes are supported.</li><li>• A status code range. Different ranges are separated with commas (,), for example, <b>200-204,300-399</b> or <b>0-5,10-12,20-30</b>. A maximum of five ranges are supported.</li></ul> |
| healthcheck_response | String | <b>Definition:</b> Specifies the returned HTTP status code in the response. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> , or <b>GRPC</b> . The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li></ul>                                                                                                                                                                                                                                                                                                                                     |

## Example Requests

Querying the details of a backend server

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools/36ce7086-a496-4666-9064-5ba0e6840c75/members/1923923e-fe8a-484f-bdbc-e11559b1f48f
```



## Example Responses

**Status code: 200**

Successful request.

```
{
 "member" : {
 "name" : "My member",
 "weight" : 10,
 "admin_state_up" : false,
 "subnet_cidr_id" : "c09f620e-3492-4429-ac15-445d5dd9ca74",
 "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
 "address" : "120.10.10.16",
 "protocol_port" : 89,
 "id" : "1923923e-fe8a-484f-bdbc-e11559b1f48f",
 "operating_status" : "NO_MONITOR",
 "ip_version" : "v4",
 "availability_zone" : "az1"
 },
 "request_id" : "45688823-45f1-40cd-9d24-e51a9574a45b"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowMemberSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowMemberRequest request = new ShowMemberRequest();
 request.withPoolId("{pool_id}");
 request.withMemberId("{member_id}");
 try {
 ShowMemberResponse response = client.showMember(request);
 }
 }
}
```

```
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ShowMemberRequest()
 request.pool_id = "{pool_id}"
 request.member_id = "{member_id}"
 response = client.show_member(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
```

```
variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before running this
example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.ShowMemberRequest{}
request.PoolId = "{pool_id}"
request.MemberId = "{member_id}"
response, err := client.ShowMember(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.12.6 Updating a Backend Server

### Function

This API is used to update a backend server.

### Constraints

If the provisioning status of the associated load balancer is not **ACTIVE**, the backend server cannot be updated.

## Calling Method

For details, see [Calling APIs](#).

## URI

PUT /v3/{project\_id}/elb/pools/{pool\_id}/members/{member\_id}

**Table 5-558** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                  |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_id  | Yes       | String | <b>Definition:</b> Specifies the backend server ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br><b>NOTE</b><br>The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that has already been associated with the load balancer. |
| pool_id    | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                       |
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A                   |

## Request Parameters

**Table 5-559** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-560** Request body parameters

| Parameter | Mandatory | Type                                      | Description                                                                                     |
|-----------|-----------|-------------------------------------------|-------------------------------------------------------------------------------------------------|
| member    | Yes       | <a href="#">UpdateMemberOption</a> object | <b>Definition:</b> Request parameters for updating a backend server.<br><b>Constraints:</b> N/A |

**Table 5-561** UpdateMemberOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | <b>Definition:</b> Specifies the administrative status of the backend server.<br>Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether ECSs exist. If ECSs exist, the value is <b>true</b> . Otherwise, the value is <b>false</b> .<br><b>Constraints:</b> Please do not specify this parameter.<br><b>Range:</b> <b>true</b> or <b>false</b><br><b>Default value:</b> N/A |

| Parameter         | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| availability_zone | No        | String  | <b>Definition:</b> Specifies the AZ of the backend server.<br><b>Constraints:</b> This parameter can be only updated for IP as backend servers. If AZ affinity is enabled for the backend server group, this parameter is mandatory for IP as backend servers and cannot be changed to "".<br><b>Range:</b> AZs available for ECSs in the current region.<br><b>Default value:</b> N/A                                                                                                                                                                                                            |
| name              | No        | String  | <b>Definition:</b> Specifies the backend server name.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| weight            | No        | Integer | <b>Definition:</b> Specifies the weight of the backend server. Requests are routed based on the load balancing algorithm configured for the backend server group and weights of backend servers.<br>The larger the weight is, the higher proportion of requests the backend server receives. If the weight is set to 0, the backend server will not accept new requests.<br><b>Constraints:</b> This parameter is invalid when <b>lb_algorithm</b> is set to <b>SOURCE_IP</b> for the backend server group that contains the backend server.<br><b>Range:</b> 0 to 100<br><b>Default value:</b> 1 |

| Parameter     | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol_port | No        | Integer | <b>Definition:</b> Specifies the port used by the backend server to receive requests.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>This parameter cannot be updated if <b>any_port_enable</b> is set to <b>true</b> for a backend server group.</li><li><b>protocol_port</b> must be set to <b>0</b> for gateway load balancers with IP backend server groups associated.</li></ul> <b>Default value:</b> N/A |

## Response Parameters

Status code: 200

Table 5-562 Response body parameters

| Parameter  | Type                 | Description                                                                                                                                                                          |
|------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String               | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| member     | <b>Member</b> object | <b>Definition:</b> Response parameters for updating a backend server.                                                                                                                |

Table 5-563 Member

| Parameter | Type   | Description                                                                                                                                                                                                                                            |
|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the backend server ID.<br><b>Range:</b> N/A<br><b>NOTE</b><br>The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that is associated with the load balancer. |

| Parameter         | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| availability_zone | String  | <b>Definition:</b> Specifies the AZ where the backend server is running.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| name              | String  | <b>Definition:</b> Specifies the backend server name.<br><b>Range:</b> N/A<br>Note: The name is not an ECS name.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| project_id        | String  | <b>Definition:</b> Specifies the project ID of the backend server.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| admin_state_up    | Boolean | <b>Definition:</b> Specifies the administrative status of the backend server.<br><b>Range:</b> <b>true</b> or <b>false</b>                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| subnet_cidr_id    | String  | <b>Definition:</b> Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. <b>neutron_subnet_id</b> defines IPv4 subnets, and <b>neutron_network_id</b> defines IPv6 subnets.<br>You can query parameter <b>neutron_subnet_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv4 subnet ID.<br>You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv6 subnet ID.<br><b>Range:</b> N/A |
| protocol_port     | Integer | <b>Definition:</b> Specifies the port used by the backend server to receive requests.<br><b>Range:</b> N/A<br><b>NOTE</b><br>This parameter can be left blank because it does not take effect if <b>any_port_enable</b> is set to <b>true</b> for a backend server group.                                                                                                                                                                                                                                                                                               |



| Parameter  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                     |
|------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| weight     | Integer | <b>Definition:</b> Specifies the weight of the backend server. Requests are routed based on the load balancing algorithm configured for the backend server group and weights of backend servers. The larger the weight is, the higher proportion of requests the backend server receives. If the weight is set to 0, the backend server will not accept new requests.<br><b>Range:</b> 0 to 100 |
| address    | String  | <b>Definition:</b> Specifies the IP address of the backend server<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                          |
| ip_version | String  | <b>Definition:</b> Specifies the IP address version supported by the backend server. The version depends on the value of <b>address</b> returned by the system.<br><b>Range:</b> v4 or v6                                                                                                                                                                                                       |

| Parameter        | Type                                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|---------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String                                      | <b>Definition:</b> Specifies the operating status of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>INITIAL:</b> The backend server is initializing. Health check is configured for the backend server group, but no data has been reported yet.</li><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>OFFLINE:</b> The backend server is detected unhealthy, or the cloud server used as the backend server is stopped or does not exist.</li><li>• <b>UNKNOWN:</b> The health check has not started yet, or no listener is associated with the backend server group, or the member IP address is not assigned to a cloud service instance (such as ECS, network interface, or supplementary network interface).</li></ul> Multiple statuses can be used for query in the format of <i>operating_status=xxx&amp;operating_status=xxx</i> . |
| status           | Array of <b>MemberStatus</b> objects        | <b>Definition:</b> Specifies the health status of the backend server.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| reason           | <b>MemberHealthCheckFailedReason</b> object | <b>Definition:</b> Specifies why health check fails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| created_at       | String                                      | <b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'THH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                   |
|-------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at  | String | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br><br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| member_type | String | <b>Definition:</b> Specifies the backend server type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ip:</b> IP as backend servers</li><li>• <b>instance:</b> ECSs used as backend servers</li></ul>                                                                                                                             |
| instance_id | String | <b>Definition:</b> Specifies the ID of the instance associated with the backend server. If this parameter is left blank, the backend server is not a real device. It may be an IP address.<br><b>Range:</b> N/A                                                                                                                               |

**Table 5-564** MemberStatus

| Parameter   | Type   | Description                                                        |
|-------------|--------|--------------------------------------------------------------------|
| listener_id | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

| Parameter        | Type                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String                                               | <b>Definition:</b> Specifies the operating status of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>OFFLINE:</b> The ECS used as the backend server is stopped or does not exist.</li><li>• <b>INITIAL:</b> Initial status of the backend server when health check is enabled.</li><li>• <b>UNKNOWN:</b> The backend server group is not associated with a listener or the backend server is not associated with an ECS.</li></ul> |
| reason           | <a href="#">MemberHealthCheckFailedReason</a> object | <b>Definition:</b> Specifies why the health check fails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| created_at       | String                                               | <b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| updated_at       | String                                               | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**Table 5-565** MemberHealthCheckFailedReason

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reason_code | String | <p><b>Definition:</b> Specifies the code of the health check failures.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>CONNECT_TIMEOUT:</b> The connection with the backend server times out during a health check.</li><li>• <b>CONNECT_REFUSED:</b> The load balancer rejects connections with the backend server during a health check.</li><li>• <b>CONNECT_FAILED:</b> The load balancer fails to establish connections with the backend server during a health check.</li><li>• <b>CONNECT_INTERRUPT:</b> The load balancer is disconnected from the backend server during a health check.</li><li>• <b>SSL_HANDSHAKE_ERROR:</b> The SSL handshakes with the backend server fail during a health check.</li><li>• <b>RECV_RESPONSE_FAILED:</b> The load balancer fails to receive responses from the backend server during a health check.</li><li>• <b>RECV_RESPONSE_TIMEOUT:</b> The load balancer does not receive responses from the backend server within the timeout duration during a health check.</li><li>• <b>SEND_REQUEST_FAILED:</b> The load balancer fails to send a health check request to the backend server during a health check.</li><li>• <b>SEND_REQUEST_TIMEOUT:</b> The load balancer fails to send a health check request to the backend server within the timeout duration.</li><li>• <b>RESPONSE_FORMAT_ERROR:</b> The load balancer receives invalid responses from the backend server during a health check.</li><li>• <b>RESPONSE_MISMATCH:</b> The response code received from the</li></ul> |

| Parameter            | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |        | backend server is different from the preset code.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| expected_response    | String | <b>Definition:</b> Specifies the expected HTTP status code. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> , or <b>GRPC</b> . The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li><li>• A list of status codes that are separated with commas (,), for example, <b>200,202</b> or <b>0,1</b>. A maximum of five status codes are supported.</li><li>• A status code range. Different ranges are separated with commas (,), for example, <b>200-204,300-399</b> or <b>0-5,10-12,20-30</b>. A maximum of five ranges are supported.</li></ul> |
| healthcheck_response | String | <b>Definition:</b> Specifies the returned HTTP status code in the response. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> , or <b>GRPC</b> . The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li></ul>                                                                                                                                                                                                                                                                                                                                     |

## Example Requests

### Changing the weight of a backend server

```
PUT https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools/36ce7086-a496-4666-9064-5ba0e6840c75/members/1923923e-fe8a-484f-bdbc-e11559b1f48f
```

```
{
 "member" : {
 "name" : "My member",
 "weight" : 10
 }
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "member" : {
 "name" : "My member",
 "weight" : 10,
 "admin_state_up" : false,
 "subnet_cidr_id" : "c09f620e-3492-4429-ac15-445d5dd9ca74",
 "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
 "address" : "120.10.10.16",
 "protocol_port" : 89,
 "id" : "1923923e-fe8a-484f-bdbc-e11559b1f48f",
 "operating_status" : "NO_MONITOR",
 "ip_version" : "v4",
 "availability_zone" : ""
 },
 "request_id" : "e7b569d4-15ad-494d-9dd9-8cd740eef8f6"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Changing the weight of a backend server

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class UpdateMemberSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);
```

```
ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
UpdateMemberRequest request = new UpdateMemberRequest();
request.withMemberId("{member_id}");
request.withPoolId("{pool_id}");
UpdateMemberRequestBody body = new UpdateMemberRequestBody();
UpdateMemberOption memberbody = new UpdateMemberOption();
memberbody.withName("My member")
 .withWeight(10);
body.withMember(memberbody);
request.withBody(body);
try {
 UpdateMemberResponse response = client.updateMember(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

### Changing the weight of a backend server

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = UpdateMemberRequest()
 request.member_id = "{member_id}"
 request.pool_id = "{pool_id}"
 memberbody = UpdateMemberOption(
 name="My member",
 weight=10
)
 request.body = UpdateMemberRequestBody(
```



```
 member=memberbody
)
 response = client.update_member(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Changing the weight of a backend server

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.UpdateMemberRequest{}
 request.MemberId = "{member_id}"
 request.PoolId = "{pool_id}"
 nameMember := "My member"
 weightMember := int32(10)
 memberbody := &model.UpdateMemberOption{
 Name: &nameMember,
 Weight: &weightMember,
 }
 request.Body = &model.UpdateMemberRequestBody{
 Member: memberbody,
 }
 response, err := client.UpdateMember(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

# 5.12.7 Batch Updating Backend Servers

## Function

This API is used to update backend servers in a given backend server group in batches. You can update up to 200 backend servers at a time from a backend server group.

## Calling Method

For details, see [Calling APIs](#).

## URI

POST /v3/{project\_id}/elb/pools/{pool\_id}/members/batch-update

**Table 5-566** Path Parameters

| Parameter | Mandatory | Type   | Description                                                                                                                            |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------|
| pool_id   | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-567** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-568** Request body parameters

| Parameter | Mandatory | Type                                                      | Description                                                           |
|-----------|-----------|-----------------------------------------------------------|-----------------------------------------------------------------------|
| members   | Yes       | Array of <a href="#">BatchUpdateMembersOption</a> objects | <b>Definition:</b> Specifies the backend server.<br><b>Range:</b> N/A |

**Table 5-569** BatchUpdateMembersOption

| Parameter         | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                              |
|-------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                | Yes       | String  | <b>Definition:</b> Specifies the backend server ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br><b>NOTE</b><br>The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that has already been associated with the load balancer.                                                                             |
| availability_zone | No        | String  | <b>Definition:</b> Specifies the AZ of the backend server.<br><b>Constraints:</b> This parameter can be only set for IP as backend servers. If AZ affinity is enabled for the backend server group, this parameter must be set to a valid value for IP as backend servers.<br><b>Range:</b> AZs available for ECSs in the current region.<br><b>Default value:</b> N/A                                   |
| admin_state_up    | No        | Boolean | Specifies the administrative status of the backend server.<br><b>Constraints:</b> Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether ECSs exist. If ECSs exist, the value is <b>true</b> . Otherwise, the value is <b>false</b> .<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>Please do not specify this parameter. |
| name              | No        | String  | <b>Definition:</b> Specifies the backend server name.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                       |

| Parameter     | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol_port | No        | Integer | <b>Definition:</b> Specifies the port used by the backend server to receive requests.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter cannot be updated if <b>any_port_enable</b> is set to <b>true</b> for a backend server group.</li><li>• <b>protocol_port</b> must be set to <b>0</b> for gateway load balancers with IP backend server groups associated.</li></ul> <b>Range:</b> 1-65535<br><b>Default value:</b> N/A                                              |
| weight        | No        | Integer | <b>Definition:</b> Specifies the weight of the backend server. Requests are routed based on the load balancing algorithm configured for the backend server group and weights of backend servers. If the weight is set to 0, the backend server will not accept new requests.<br><b>Constraints:</b> This parameter is invalid when <b>lb_algorithm</b> is set to <b>SOURCE_IP</b> for the backend server group that contains the backend server.<br><b>Range:</b> 0 to 100<br><b>Default value:</b> N/A |

## Response Parameters

Status code: 200

**Table 5-570** Response body parameters

| Parameter  | Type   | Description                                                                                                                                                                          |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

| Parameter | Type                                               | Description                                       |
|-----------|----------------------------------------------------|---------------------------------------------------|
| members   | Array of <a href="#">BatchUpdateMember</a> objects | <b>Definition:</b> Specifies the backend servers. |

**Table 5-571** BatchUpdateMember

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                    |
|----------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | <b>Definition:</b> Specifies the backend server ID.<br><b>Range:</b> N/A<br><b>NOTE</b><br>The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that is associated with the load balancer.                                                         |
| name           | String  | <b>Definition:</b> Specifies the backend server name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                     |
| project_id     | String  | Specifies the ID of the project where the backend server is used.<br><b>Range:</b> N/A                                                                                                                                                                                                                         |
| admin_state_up | Boolean | Specifies the administrative status of the backend server.<br>Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether ECSs exist. If ECSs exist, the value is <b>true</b> . Otherwise, the value is <b>false</b> .<br><b>Range:</b> N/A |

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| subnet_cidr_id | String  | <p><b>Definition:</b> Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. <b>neutron_subnet_id</b> defines IPv4 subnets, and <b>neutron_network_id</b> defines IPv6 subnets.</p> <p>You can query parameter <b>neutron_subnet_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv4 subnet ID.</p> <p>You can query parameter <b>neutron_network_id</b> in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets) to get the IPv6 subnet ID.</p> <p><b>Range:</b> N/A</p> |
| protocol_port  | Integer | <p><b>Definition:</b> Specifies the port used by the backend server to receive requests.</p> <p><b>Range:</b> N/A</p> <p><b>NOTE</b></p> <p>This parameter can be left blank because it does not take effect if <b>any_port_enable</b> is set to <b>true</b> for a backend server group.</p>                                                                                                                                                                                                                                                                                               |
| weight         | Integer | <p><b>Definition:</b> Specifies the weight of the backend server. Requests are routed based on the load balancing algorithm configured for the backend server group and weights of backend servers.</p> <p>The larger the weight is, the higher proportion of requests the backend server receives. If the weight is set to 0, the backend server will not accept new requests.</p> <p><b>Range:</b> 0 to 100</p>                                                                                                                                                                          |
| address        | String  | <p><b>Definition:</b> Specifies the IP address of the backend server</p> <p><b>Range:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Parameter        | Type                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String                                               | <b>Definition:</b> Specifies the operating status of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>INITIAL:</b> The backend server is initializing. Health check is configured for the backend server group, but no data has been reported yet.</li><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>OFFLINE:</b> The backend server is detected unhealthy, or the cloud server used as the backend server is stopped or does not exist.</li><li>• <b>UNKNOWN:</b> The health check has not started yet, or no listener is associated with the backend server group, or the member IP address is not assigned to a cloud service instance (such as ECS, network interface, or supplementary network interface).</li></ul> |
| reason           | <a href="#">MemberHealthCheckFailedReason</a> object | <b>Definition:</b> Specifies why health check fails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| status           | Array of <a href="#">MemberStatus</a> objects        | <b>Definition:</b> Specifies the health status of the backend server if <b>listener_id</b> under <b>status</b> is specified. If <b>listener_id</b> under <b>status</b> is not specified, <b>operating_status</b> of <b>member</b> takes precedence.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| member_type      | String                                               | <b>Definition:</b> Specifies the type of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ip:</b> IP as backend servers</li><li>• <b>instance:</b> ECSs used as backend servers</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |



| Parameter         | Type   | Description                                                                                                                                                                                                                                                                                                                                 |
|-------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| instance_id       | String | <b>Definition:</b> Specifies the ID of the instance associated with the backend server. If this parameter is left blank, the backend server is not a real device. It may be an IP address.<br><b>Range:</b> N/A                                                                                                                             |
| port_id           | String | <b>Definition:</b> Specifies the ID of the VPC port bound to the IP address.<br><b>Range:</b> N/A                                                                                                                                                                                                                                           |
| created_at        | String | <b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| updated_at        | String | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.   |
| availability_zone | String | Specifies the AZ where the backend server is running.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                  |

**Table 5-572** MemberStatus

| Parameter   | Type   | Description                                                        |
|-------------|--------|--------------------------------------------------------------------|
| listener_id | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

| Parameter        | Type                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String                                               | <b>Definition:</b> Specifies the operating status of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>OFFLINE:</b> The ECS used as the backend server is stopped or does not exist.</li><li>• <b>INITIAL:</b> Initial status of the backend server when health check is enabled.</li><li>• <b>UNKNOWN:</b> The backend server group is not associated with a listener or the backend server is not associated with an ECS.</li></ul> |
| reason           | <a href="#">MemberHealthCheckFailedReason</a> object | <b>Definition:</b> Specifies why the health check fails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| created_at       | String                                               | <b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| updated_at       | String                                               | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**Table 5-573** MemberHealthCheckFailedReason

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reason_code | String | <p><b>Definition:</b> Specifies the code of the health check failures.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>CONNECT_TIMEOUT:</b> The connection with the backend server times out during a health check.</li><li>• <b>CONNECT_REFUSED:</b> The load balancer rejects connections with the backend server during a health check.</li><li>• <b>CONNECT_FAILED:</b> The load balancer fails to establish connections with the backend server during a health check.</li><li>• <b>CONNECT_INTERRUPT:</b> The load balancer is disconnected from the backend server during a health check.</li><li>• <b>SSL_HANDSHAKE_ERROR:</b> The SSL handshakes with the backend server fail during a health check.</li><li>• <b>RECV_RESPONSE_FAILED:</b> The load balancer fails to receive responses from the backend server during a health check.</li><li>• <b>RECV_RESPONSE_TIMEOUT:</b> The load balancer does not receive responses from the backend server within the timeout duration during a health check.</li><li>• <b>SEND_REQUEST_FAILED:</b> The load balancer fails to send a health check request to the backend server during a health check.</li><li>• <b>SEND_REQUEST_TIMEOUT:</b> The load balancer fails to send a health check request to the backend server within the timeout duration.</li><li>• <b>RESPONSE_FORMAT_ERROR:</b> The load balancer receives invalid responses from the backend server during a health check.</li><li>• <b>RESPONSE_MISMATCH:</b> The response code received from the</li></ul> |

| Parameter            | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |        | backend server is different from the preset code.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| expected_response    | String | <b>Definition:</b> Specifies the expected HTTP status code. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> , or <b>GRPC</b> . The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li><li>• A list of status codes that are separated with commas (,), for example, <b>200,202</b> or <b>0,1</b>. A maximum of five status codes are supported.</li><li>• A status code range. Different ranges are separated with commas (,), for example, <b>200-204,300-399</b> or <b>0-5,10-12,20-30</b>. A maximum of five ranges are supported.</li></ul> |
| healthcheck_response | String | <b>Definition:</b> Specifies the returned HTTP status code in the response. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> , or <b>GRPC</b> . The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li></ul>                                                                                                                                                                                                                                                                                                                                     |

## Example Requests

### Modifying backend servers in batches

```
POST https://{ELB_Endpoint}/v3/04dd36f964000fe22f9ac00bc85b1a1d/elb/pools/04a9bc65-b75b-478d-b4d6-e693bb61dd35/members/batch-update
```

```
{
 "members": [{
 "name": "batch_update_member1",
 "weight": 1,
 "admin_state_up": true,
 "protocol_port": 8080,
 "id": "61da8098-954b-4809-bc5a-b99ccef8a398"
 }, {
 "name": "batch_update_member2",
 "weight": 2,
 "admin_state_up": true,
 "protocol_port": 8081,
 "id": "61da8098-954b-4809-bc5a-b99ccef8a398"
 }]
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "request_id": "b5d8bb34d28f3e47b352c14419e8fe04",
 "members": [{
 "weight": 1,
 "admin_state_up": false,
 "project_id": "04dd36f964000fe22f9ac00bc85b1a1d",
 "address": "192.168.0.48",
 "protocol_port": 8080,
 "id": "9346ad28-6971-456a-9711-2917d023930a",
 "operating_status": "OFFLINE",
 "name": "batch_member1",
 "subnet_cidr_id": "61da8098-954b-4809-bc5a-b99ccef8a398"
 }, {
 "weight": 1,
 "admin_state_up": false,
 "project_id": "04dd36f964000fe22f9ac00bc85b1a1d",
 "address": "192.168.0.49",
 "protocol_port": 8080,
 "id": "94548801-1023-452f-bcf7-6174e77cb772",
 "operating_status": "OFFLINE",
 "name": "batch_member2",
 "subnet_cidr_id": "61da8098-954b-4809-bc5a-b99ccef8a398"
 }]
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Modifying backend servers in batches

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;
```

```
import java.util.List;
import java.util.ArrayList;

public class BatchUpdateMembersSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR_REGION>"))
 .build();
 BatchUpdateMembersRequest request = new BatchUpdateMembersRequest();
 request.withPoolId("{pool_id}");
 BatchUpdateMembersRequestBody body = new BatchUpdateMembersRequestBody();
 List<BatchUpdateMembersOption> listbodyMembers = new ArrayList<>();
 listbodyMembers.add(
 new BatchUpdateMembersOption()
 .withId("61da8098-954b-4809-bc5a-b99ccef8a398")
 .withAdminStateUp(true)
 .withName("batch_update_member1")
 .withProtocolPort(8080)
 .withWeight(1)
);
 listbodyMembers.add(
 new BatchUpdateMembersOption()
 .withId("61da8098-954b-4809-bc5a-b99ccef8a398")
 .withAdminStateUp(true)
 .withName("batch_update_member2")
 .withProtocolPort(8081)
 .withWeight(2)
);
 body.withMembers(listbodyMembers);
 request.withBody(body);
 try {
 BatchUpdateMembersResponse response = client.batchUpdateMembers(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

### Modifying backend servers in batches

```
coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = BatchUpdateMembersRequest()
 request.pool_id = "{pool_id}"
 listMembersbody = [
 BatchUpdateMembersOption(
 id="61da8098-954b-4809-bc5a-b99ccef8a398",
 admin_state_up=True,
 name="batch_update_member1",
 protocol_port=8080,
 weight=1
),
 BatchUpdateMembersOption(
 id="61da8098-954b-4809-bc5a-b99ccef8a398",
 admin_state_up=True,
 name="batch_update_member2",
 protocol_port=8081,
 weight=2
)
]
 request.body = BatchUpdateMembersRequestBody(
 members=listMembersbody
)
 response = client.batch_update_members(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Modifying backend servers in batches

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
```

```
risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before running this
example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.BatchUpdateMembersRequest{}
request.PoolId = "{pool_id}"
adminStateUpMembers:= true
nameMembers:= "batch_update_member1"
protocolPortMembers:= int32(8080)
weightMembers:= int32(1)
adminStateUpMembers1:= true
nameMembers1:= "batch_update_member2"
protocolPortMembers1:= int32(8081)
weightMembers1:= int32(2)
var listMembersbody = []model.BatchUpdateMembersOption{
 {
 Id: "61da8098-954b-4809-bc5a-b99ccef8a398",
 AdminStateUp: &adminStateUpMembers,
 Name: &nameMembers,
 ProtocolPort: &protocolPortMembers,
 Weight: &weightMembers,
 },
 {
 Id: "61da8098-954b-4809-bc5a-b99ccef8a398",
 AdminStateUp: &adminStateUpMembers1,
 Name: &nameMembers1,
 ProtocolPort: &protocolPortMembers1,
 Weight: &weightMembers1,
 },
}
request.Body = &model.BatchUpdateMembersRequestBody{
 Members: listMembersbody,
}
response, err := client.BatchUpdateMembers(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.



## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.12.8 Removing a Backend Server

### Function

This API is used to remove a backend server.

### Constraints

After you remove a backend server, new connections to this server will not be established. However, established persistent connections will be maintained.

### Calling Method

For details, see [Calling APIs](#).

### URI

DELETE /v3/{project\_id}/elb/pools/{pool\_id}/members/{member\_id}

**Table 5-574** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pool_id   | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                           |
| member_id | Yes       | String | <b>Definition:</b> Specifies the backend server ID. The member ID can be obtained by <a href="#">querying the backend server list</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br><b>NOTE</b><br>The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that has already been associated with the load balancer. |

## Request Parameters

**Table 5-575** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 204**

Successful request.

None

## Example Requests

Deleting a given backend server

```
DELETE https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools/36ce7086-
a496-4666-9064-5ba0e6840c75/members/1923923e-fe8a-484f-bdbc-e11559b1f48f
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeleteMemberSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 DeleteMemberRequest request = new DeleteMemberRequest();
 request.withPoolId("{pool_id}");
 request.withMemberId("{member_id}");
 try {
 DeleteMemberResponse response = client.deleteMember(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeleteMemberRequest()
 request.pool_id = "{pool_id}"
 request.member_id = "{member_id}"
 response = client.delete_member(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
```

```
WithRegion(region.ValueOf("<YOUR REGION>")).
WithCredential(auth).
Build())

request := &model.DeleteMemberRequest{
 request.PoolId = "{pool_id}"
 request.MemberId = "{member_id}"
 response, err := client.DeleteMember(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.12.9 Batch Removing Backend Servers

### Function

This API is used to remove backend servers from the specified backend server group in batches. You can remove up to 200 backend servers at a time from a backend server group.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/pools/{pool\_id}/members/batch-delete

**Table 5-576** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pool_id    | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                     |
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-577** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-578** Request body parameters

| Parameter | Mandatory | Type                                                      | Description                                                                                                       |
|-----------|-----------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
| members   | Yes       | Array of <a href="#">BatchDeleteMembersOption</a> objects | <b>Definition:</b> Specifies the request body for removing backend servers in batches.<br><b>Constraints:</b> N/A |

**Table 5-579** BatchDeleteMembersOption

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | No        | String | <b>Definition:</b> Specifies the ID of the backend server to be deleted.<br><b>Constraints:</b> If <b>id</b> is passed, other parameters cannot be specified. Otherwise, an error will be reported.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br><b>NOTE</b><br>The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that has already been associated with the load balancer. |
| address   | No        | String | <b>Definition:</b> Specifies the IP address bound to the backend server.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• <b>address</b> and <b>protocol_port</b> must be passed at the same time.</li><li>• <b>id</b> cannot be passed together with <b>address</b> and <b>protocol_port</b>.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                             |

| Parameter     | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol_port | No        | Integer | <b>Definition:</b> Specifies the port used by the backend server to receive requests.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• <b>address</b> and <b>protocol_port</b> must be passed at the same time.</li><li>• <b>id</b> cannot be passed together with <b>address</b> and <b>protocol_port</b>.</li><li>• This parameter can be set to <b>0</b>, which is used to remove a backend server from its backend server group with <b>any_port_enable</b> set to <b>true</b>.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

Status code: 200

Table 5-580 Response body parameters

| Parameter  | Type                                                     | Description                                                                                                                                                                          |
|------------|----------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                                                   | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| members    | Array of <a href="#">BatchDeleteMembersState</a> objects | <b>Definition:</b> Specifies the backend servers.                                                                                                                                    |



**Table 5-581** BatchDeleteMembersState

| Parameter  | Type   | Description                                                                                                                                                                                                                                                 |
|------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id         | String | <b>Definition:</b> Specifies the backend server ID.<br><b>Range:</b> N/A<br><b>NOTE</b><br>The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that is associated with the load balancer.      |
| ret_status | String | <b>Definition:</b> Specifies the status of deleting the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>successful:</b> The backend server is deleted.</li><li>• <b>not found:</b> The backend server does not exist.</li></ul> |

## Example Requests

- Removing backend servers in batches by ID

POST https://{ELB\_Endpoint}/v3/04dd36f964000fe22f9ac00bc85b1a1d/elb/pools/04a9bc65-b75b-478d-b4d6-e693bb61dd35/members/batch-delete

```
{
 "members" : [{
 "id" : "141a8dea-b3f9-4fed-a1e2-30678f53de0b"
 }, {
 "id" : "14d0a82b-fcc2-4ce8-aac8-96d86a7973e4"
 }]
}
```

- Removing backend servers in batches by IP address and port

POST https://{ELB\_Endpoint}/v3/04dd36f964000fe22f9ac00bc85b1a1d/elb/pools/04a9bc65-b75b-478d-b4d6-e693bb61dd35/members/batch-delete

```
{
 "members" : [{
 "address" : "192.168.0.48",
 "protocol_port" : 8080
 }, {
 "address" : "192.168.0.49",
 "protocol_port" : 8080
 }]
}
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "request_id" : "db97a1d3c5ee386729dc00e4df1d5708",
 "members" : [{
 "id" : "141a8dea-b3f9-4fed-a1e2-30678f53de0b",
```

```
"ret_status" : "not found"
}, {
 "id" : "14d0a82b-fcc2-4ce8-aac8-96d86a7973e4",
 "ret_status" : "successful"
}]
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

- Removing backend servers in batches by ID

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchDeleteMembersSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 BatchDeleteMembersRequest request = new BatchDeleteMembersRequest();
 request.withPoolId("{pool_id}");
 BatchDeleteMembersRequestBody body = new BatchDeleteMembersRequestBody();
 List<BatchDeleteMembersOption> listbodyMembers = new ArrayList<>();
 listbodyMembers.add(
 new BatchDeleteMembersOption()
 .withId("141a8dea-b3f9-4fed-a1e2-30678f53de0b")
);
 listbodyMembers.add(
 new BatchDeleteMembersOption()
 .withId("14d0a82b-fcc2-4ce8-aac8-96d86a7973e4")
);
 body.withMembers(listbodyMembers);
 request.withBody(body);
 try {
 BatchDeleteMembersResponse response = client.batchDeleteMembers(request);
 System.out.println(response.toString());
 }
```

```
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

- Removing backend servers in batches by IP address and port

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchDeleteMembersSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 BatchDeleteMembersRequest request = new BatchDeleteMembersRequest();
 request.withPoolId("{pool_id}");
 BatchDeleteMembersRequestBody body = new BatchDeleteMembersRequestBody();
 List<BatchDeleteMembersOption> listbodyMembers = new ArrayList<>();
 listbodyMembers.add(
 new BatchDeleteMembersOption()
 .withAddress("192.168.0.48")
 .withProtocolPort(8080)
);
 listbodyMembers.add(
 new BatchDeleteMembersOption()
 .withAddress("192.168.0.49")
 .withProtocolPort(8080)
);
 body.withMembers(listbodyMembers);
 request.withBody(body);
 try {
 BatchDeleteMembersResponse response = client.batchDeleteMembers(request);
 System.out.println(response.toString());
 }
 }
}
```

```
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

## Python

- Removing backend servers in batches by ID

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = BatchDeleteMembersRequest()
 request.pool_id = "{pool_id}"
 listMembersbody = [
 BatchDeleteMembersOption(
 id="141a8dea-b3f9-4fed-a1e2-30678f53de0b"
),
 BatchDeleteMembersOption(
 id="14d0a82b-fcc2-4ce8-aac8-96d86a7973e4"
)
]
 request.body = BatchDeleteMembersRequestBody(
 members=listMembersbody
)
 response = client.batch_delete_members(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

- Removing backend servers in batches by IP address and port

```
coding: utf-8

import os
```

```
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = BatchDeleteMembersRequest()
 request.pool_id = "{pool_id}"
 listMembersbody = [
 BatchDeleteMembersOption(
 address="192.168.0.48",
 protocol_port=8080
),
 BatchDeleteMembersOption(
 address="192.168.0.49",
 protocol_port=8080
)
]
 request.body = BatchDeleteMembersRequestBody(
 members=listMembersbody
)
 response = client.batch_delete_members(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

- Removing backend servers in batches by ID

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
```

```
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.BatchDeleteMembersRequest{}
request.PoolId = "{pool_id}"
idMembers:= "141a8dea-b3f9-4fed-a1e2-30678f53de0b"
idMembers1:= "14d0a82b-fcc2-4ce8-aac8-96d86a7973e4"
var listMembersbody = []model.BatchDeleteMembersOption{
 {
 Id: &idMembers,
 },
 {
 Id: &idMembers1,
 },
}
request.Body = &model.BatchDeleteMembersRequestBody{
 Members: listMembersbody,
}
response, err := client.BatchDeleteMembers(request)
if err == nil {
 fmt.Printf("%v\n", response)
} else {
 fmt.Println(err)
}
}
```

- Removing backend servers in batches by IP address and port

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())
```

```
request := &model.BatchDeleteMembersRequest{}
request.PoolId = "{pool_id}"
addressMembers:= "192.168.0.48"
protocolPortMembers:= int32(8080)
addressMembers1:= "192.168.0.49"
protocolPortMembers1:= int32(8080)
var listMembersbody = []model.BatchDeleteMembersOption{
 {
 Address: &addressMembers,
 ProtocolPort: &protocolPortMembers,
 },
 {
 Address: &addressMembers1,
 ProtocolPort: &protocolPortMembers1,
 },
}
request.Body = &model.BatchDeleteMembersRequestBody{
 Members: listMembersbody,
}
response, err := client.BatchDeleteMembers(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.12.10 Creating a Backend Server Check Task

### Function

This API is used to create a task for checking the configurations, network ACL rules, and security group rules of a backend server.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/members/{member\_id}/health-check

**Table 5-582** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| member_id  | Yes       | String | <b>Definition:</b> Specifies the backend server ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                           |

## Request Parameters

**Table 5-583** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-584** Request body parameters

| Parameter    | Mandatory | Type                                                    | Description                                                                                   |
|--------------|-----------|---------------------------------------------------------|-----------------------------------------------------------------------------------------------|
| member_check | No        | <a href="#">CreateMemberHealthCheckJobOption</a> object | <b>Definition:</b> Specifies the request parameters for creating a backend server check task. |



**Table 5-585** CreateMemberHealthCheckJobOption

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                          |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listener_id | Yes       | String | <b>Definition:</b> Specifies the ID of a listener to query the status of the backend servers that are associated with this listener.<br><b>Range:</b> N/A                                                                                                                                            |
| subject     | Yes       | String | <b>Definition:</b> Specifies the check items.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>securityGroup:</b> security group checks</li><li>• <b>networkAcl:</b> network ACL checks</li><li>• <b>config:</b> health check port checks</li><li>• <b>all:</b> all check items</li></ul> |

## Response Parameters

**Status code:** 201

**Table 5-586** Response body parameters

| Parameter    | Type                                  | Description                                                                                                                                                                          |
|--------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_check | <a href="#">MemberCheckJob</a> object | <b>Definition:</b> Specifies the information about the backend server check task.                                                                                                    |
| request_id   | String                                | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-587** MemberCheckJob

| Parameter | Type   | Description                                                                                                    |
|-----------|--------|----------------------------------------------------------------------------------------------------------------|
| job_id    | String | <b>Definition:</b> Specifies the task ID that is used to query the task execution result.<br><b>Range:</b> N/A |

## Example Requests

Creating a backend server check task

```
POST https://{ELB_Endpoint}/v3/0c1503d710984bad92306faea3654dfd/elb/members/02272819-5655-4c6b-892b-105604f6aea0/health-check

{
 "member_check" : {
 "listener_id" : "b445cc43-02d7-4863-9481-283b7fb1c222",
 "subject" : "all"
 }
}
```

## Example Responses

**Status code: 201**

Successful request.

```
{
 "member_check" : {
 "job_id" : "919221ce-0011-4558-81ca-2866e6e68a27"
 },
 "request_id" : "9869f52f-b740-4075-bb29-6dd0008a1f1d"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Creating a backend server check task

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CreateMemberHealthCheckJobSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
```

```
.withRegion(ElbRegion.valueOf("<YOUR REGION>"))
.build();
CreateMemberHealthCheckJobRequest request = new CreateMemberHealthCheckJobRequest();
request.withMemberId("{member_id}");
CreateMemberHealthCheckJobRequestBody body = new CreateMemberHealthCheckJobRequestBody();
CreateMemberHealthCheckJobOption memberCheckbody = new
CreateMemberHealthCheckJobOption();
memberCheckbody.withListenerId("b445cc43-02d7-4863-9481-283b7fb1c222")
.withSubject("all");
body.withMemberCheck(memberCheckbody);
request.withBody(body);
try {
 CreateMemberHealthCheckJobResponse response = client.createMemberHealthCheckJob(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

### Creating a backend server check task

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateMemberHealthCheckJobRequest()
 request.member_id = "{member_id}"
 memberCheckbody = CreateMemberHealthCheckJobOption(
 listener_id="b445cc43-02d7-4863-9481-283b7fb1c222",
 subject="all"
)
 request.body = CreateMemberHealthCheckJobRequestBody(
 member_check=memberCheckbody
)
 response = client.create_member_health_check_job(request)
 print(response)
```

```
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Creating a backend server check task

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.CreateMemberHealthCheckJobRequest{}
 request.MemberId = "{member_id}"
 memberCheckbody := &model.CreateMemberHealthCheckJobOption{
 ListenerId: "b445cc43-02d7-4863-9481-283b7fb1c222",
 Subject: "all",
 }
 request.Body = &model.CreateMemberHealthCheckJobRequestBody{
 MemberCheck: memberCheckbody,
 }
 response, err := client.CreateMemberHealthCheckJob(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 201         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.12.11 Querying the Results of a Backend Server Check Task

### Function

This API is used to query the results of a backend server check task.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/members/check/jobs/{job\_id}

**Table 5-588** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| job_id     | Yes       | String | <b>Definition:</b> Specifies the task ID returned by the API for creating a backend server check task.                                                                                                                                                                                                     |

## Request Parameters

**Table 5-589** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-590** Response body parameters

| Parameter    | Type                                      | Description                                                                                                                                                                          |
|--------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_check | <a href="#">MemberCheckJobInfo</a> object | <b>Definition:</b> Specifies the information about the backend server check task.                                                                                                    |
| request_id   | String                                    | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-591** MemberCheckJobInfo

| Parameter  | Type                                        | Description                                                                                                                                                             |
|------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| status     | String                                      | <b>Definition:</b> Specifies the result of a backend server check task. The value can be <b>processed</b> , <b>processing</b> , or <b>failed</b> .<br><b>Range:</b> N/A |
| result     | <a href="#">MemberCheckJobResult</a> object | <b>Definition:</b> Specifies the result of each check item.                                                                                                             |
| created_at | String                                      | <b>Definition:</b> Specifies the task creation time.<br><b>Range:</b> N/A                                                                                               |

| Parameter               | Type    | Description                                                                                                                                               |
|-------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at              | String  | <b>Definition:</b> Specifies the task update time.<br><b>Range:</b> N/A                                                                                   |
| job_id                  | String  | <b>Definition:</b> Specifies the task ID.                                                                                                                 |
| check_item_total_num    | Integer | <b>Definition:</b> Specifies the total number of check items.<br><b>Range:</b> N/A                                                                        |
| check_item_finished_num | Integer | <b>Definition:</b> Specifies the number of checked items.<br><b>Range:</b> N/A                                                                            |
| listener_id             | String  | <b>Definition:</b> Specifies the ID of a listener to query the status of the backend servers that are associated with this listener.<br><b>Range:</b> N/A |
| member_id               | String  | <b>Definition:</b> Specifies the backend server ID.<br><b>Range:</b> N/A                                                                                  |

**Table 5-592** MemberCheckJobResult

| Parameter      | Type                                    | Description                                                                      |
|----------------|-----------------------------------------|----------------------------------------------------------------------------------|
| config         | <b>MemberCheckJobResultGroup</b> object | <b>Definition:</b> Specifies the configuration check.<br><b>Range:</b> N/A       |
| acl            | <b>MemberCheckJobResultGroup</b> object | <b>Definition:</b> Specifies the network ACL rule check.<br><b>Range:</b> N/A    |
| security_group | <b>MemberCheckJobResultGroup</b> object | <b>Definition:</b> Specifies the security group rule check.<br><b>Range:</b> N/A |

**Table 5-593** MemberCheckJobResultGroup

| Parameter    | Type                                                      | Description                                                                                                                                                                  |
|--------------|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| check_result | Boolean                                                   | <b>Definition:</b> Specifies the check result. <b>true</b> indicates that the check is passed, and <b>false</b> indicates that the check is not passed.<br><b>Range:</b> N/A |
| check_items  | Array of <a href="#">MemberCheckJobResultItem</a> objects | <b>Definition:</b> Specifies the summary of grouped check items.                                                                                                             |
| check_status | String                                                    | <b>Definition:</b> Specifies the result of a backend server check task. The value can be <b>processed</b> , <b>processing</b> , or <b>failed</b> .<br><b>Range:</b> N/A      |

**Table 5-594** MemberCheckJobResultItem

| Parameter       | Type   | Description                                                                                                                                  |
|-----------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------|
| name            | String | <b>Definition:</b> Specifies the check item name.<br><b>Range:</b> N/A                                                                       |
| reason          | String | <b>Definition:</b> Specifies the exception cause.<br><b>Range:</b> N/A                                                                       |
| severity        | String | <b>Definition:</b> Specifies the exception severity, which can be <b>Major</b> (severe) or <b>Tips</b> (informational).<br><b>Range:</b> N/A |
| subject         | String | <b>Definition:</b> Specifies the check type. <b>config</b> indicates configuration check.<br><b>Range:</b> N/A                               |
| job_id          | String | <b>Definition:</b> Specifies the task ID.<br><b>Range:</b> N/A                                                                               |
| reason_template | String | <b>Definition:</b> Specifies the exception reason template.<br><b>Range:</b> N/A                                                             |



| Parameter     | Type             | Description                                                                                                                                                              |
|---------------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reason_params | Array of strings | <b>Definition:</b> Specifies the exception variables, which is used to dynamically generate exception causes based on the exception cause template.<br><b>Range:</b> N/A |

## Example Requests

Querying the results of a backend server check task

```
POST https://{ELB_Endpoint}/v3/04dd36f964000fe22f9ac00bc85b1a1d/elb/members/check/jobs/04a9bc65-b75b-478d-b4d6-e693bb61dd35
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "member_check" : {
 "status" : "processed",
 "result" : {
 "config" : {
 "check_result" : true,
 "check_items" : [{
 "name" : "check_hc_config_port",
 "reason" : null,
 "severity" : "Tips",
 "subject" : "config",
 "job_id" : "919221ce-0011-4558-81ca-2866e6e68a27",
 "reason_template" : "healthCheck {$hm_id}'s protocolPort {$protocol_port} is different from member port {$member_port}",
 "reason_params" : []
 }],
 "check_status" : "processed"
 },
 "acl" : {
 "check_result" : true,
 "check_items" : [{
 "name" : "acl_check_hc_protocol_egress",
 "reason" : null,
 "severity" : "Major",
 "subject" : "networkAcl",
 "job_id" : "919221ce-0011-4558-81ca-2866e6e68a27",
 "reason_template" : "healthCheck {$hm_id}'s protocol is {$hc_protocol}, but the transport layer protocol corresponding to the protocol {$trans_protocol} is not allowed by ACL {$acl_id} egress policies",
 "reason_params" : []
 }, {
 "name" : "acl_check_hc_dest_port_egress",
 "reason" : null,
 "severity" : "Major",
 "subject" : "networkAcl",
 "job_id" : "919221ce-0011-4558-81ca-2866e6e68a27",
 "reason_template" : "healthCheck destination port may not allowed by ACL {$acl_id} egress policies, it is recommended to open all destination ports",
 "reason_params" : []
 }, {
 "name" : "acl_check_hc_dest_ip_egress",
 "reason" : null,
```

```
"severity": "Major",
"subject": "networkAcl",
"job_id": "919221ce-0011-4558-81ca-2866e6e68a27",
"reason_template": "healthCheck destination IP {$dest_ip} is not allowed by ACL {$acl_id} egress
policies",
"reason_params": []
}, {
"name": "acl_check_hc_source_port_egress",
"reason": null,
"severity": "Major",
"subject": "networkAcl",
"job_id": "919221ce-0011-4558-81ca-2866e6e68a27",
"reason_template": "healthCheck source port {$source_port} is not allowed by ACL {$acl_id} egress
policies",
"reason_params": []
}, {
"name": "acl_check_hc_source_ip_egress",
"reason": null,
"severity": "Major",
"subject": "networkAcl",
"job_id": "919221ce-0011-4558-81ca-2866e6e68a27",
"reason_template": "healthCheck source IP {$source_ip} is not allowed by ACL {$acl_id} egress
policies",
"reason_params": []
}, {
"name": "acl_check_hc_protocol_ingress",
"reason": null,
"severity": "Major",
"subject": "networkAcl",
"job_id": "919221ce-0011-4558-81ca-2866e6e68a27",
"reason_template": "healthCheck {$hm_id}'s protocol is {$hc_protocol}, but the transport layer
protocol corresponding to the protocol {$trans_protocol} is not allowed by ACL {$acl_id} ingress policies",
"reason_params": []
}, {
"name": "acl_check_hc_dest_port_ingress",
"reason": null,
"severity": "Major",
"subject": "networkAcl",
"job_id": "919221ce-0011-4558-81ca-2866e6e68a27",
"reason_template": "healthCheck destination port {$dest_port} is not allowed by ACL {$acl_id}
ingress policies",
"reason_params": []
}, {
"name": "acl_check_hc_dest_ip_ingress",
"reason": null,
"severity": "Major",
"subject": "networkAcl",
"job_id": "919221ce-0011-4558-81ca-2866e6e68a27",
"reason_template": "healthCheck destination IP {$dest_ip} is not allowed by ACL {$acl_id} ingress
policies",
"reason_params": []
}, {
"name": "acl_check_hc_source_port_ingress",
"reason": null,
"severity": "Tips",
"subject": "networkAcl",
"job_id": "919221ce-0011-4558-81ca-2866e6e68a27",
"reason_template": "healthCheck source port may not allowed by ACL {$acl_id} ingress policies, it is
recommended to open all destination ports",
"reason_params": []
}, {
"name": "acl_check_hc_source_ip_ingress",
"reason": null,
"severity": "Major",
"subject": "networkAcl",
"job_id": "919221ce-0011-4558-81ca-2866e6e68a27",
"reason_template": "healthCheck source IP {$source_ip} is not allowed by ACL {$acl_id} ingress
policies",
"reason_params": []
```

```
 },
 "check_status" : "processed"
 },
 "security_group" : {
 "check_result" : true,
 "check_items" : [{
 "name" : "security_group_check_hc_protocol_egress",
 "reason" : null,
 "severity" : "Major",
 "subject" : "securityGroup",
 "job_id" : "919221ce-0011-4558-81ca-2866e6e68a27",
 "reason_template" : "healthCheck {$hm_id}'s protocol is {$hc_protocol}, but the transport layer
protocol corresponding to the protocol {$transport_protocol} is not allowed by securityGroup
{$security_group_id} egress rules",
 "reason_params" : []
 }, {
 "name" : "security_group_check_hc_port_egress",
 "reason" : null,
 "severity" : "Major",
 "subject" : "securityGroup",
 "job_id" : "919221ce-0011-4558-81ca-2866e6e68a27",
 "reason_template" : "healthCheck dest port {$dest_port} is not allowed by securityGroup
{$security_group_id} egress rules",
 "reason_params" : []
 }, {
 "name" : "security_group_check_hc_source_ip_egress",
 "reason" : null,
 "severity" : "Major",
 "subject" : "securityGroup",
 "job_id" : "919221ce-0011-4558-81ca-2866e6e68a27",
 "reason_template" : "healthCheck source IP {$source_ip} is not allowed by securityGroup
{$security_group_id} egress rules",
 "reason_params" : []
 }, {
 "name" : "security_group_check_hc_protocol_ingress",
 "reason" : null,
 "severity" : "Major",
 "subject" : "securityGroup",
 "job_id" : "919221ce-0011-4558-81ca-2866e6e68a27",
 "reason_template" : "healthCheck {$hm_id}'s protocol is {$hc_protocol}, but the transport layer
protocol corresponding to the protocol {$transport_protocol} is not allowed by securityGroup
{$security_group_id} ingress rules",
 "reason_params" : []
 }, {
 "name" : "security_group_check_hc_port_ingress",
 "reason" : null,
 "severity" : "Major",
 "subject" : "securityGroup",
 "job_id" : "919221ce-0011-4558-81ca-2866e6e68a27",
 "reason_template" : "healthCheck dest port {$dest_port} is not allowed by securityGroup
{$security_group_id} ingress rules",
 "reason_params" : []
 }, {
 "name" : "security_group_check_hc_source_ip_ingress",
 "reason" : null,
 "severity" : "Major",
 "subject" : "securityGroup",
 "job_id" : "919221ce-0011-4558-81ca-2866e6e68a27",
 "reason_template" : "healthCheck source IP {$source_ip} is not allowed by securityGroup
{$security_group_id} ingress rules",
 "reason_params" : []
 }
],
 "check_status" : "processed"
}
},
"created_at" : "2024-12-08T07:55:04Z",
"updated_at" : "2024-12-08T07:55:05Z",
"job_id" : "919221ce-0011-4558-81ca-2866e6e68a27",
"check_item_total_num" : 17,
```

```
"check_item_finished_num" : 17,
"listener_id" : "b445cc43-02d7-4863-9481-283b7fb1c222",
"member_id" : "02272819-5655-4c6b-892b-105604f6aea0"
},
"request_id" : "5980e624-dc64-46b9-8d74-e5834655dab5"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowMemberHealthCheckJobSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowMemberHealthCheckJobRequest request = new ShowMemberHealthCheckJobRequest();
 request.withJobId("{job_id}");
 try {
 ShowMemberHealthCheckJobResponse response = client.showMemberHealthCheckJob(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ShowMemberHealthCheckJobRequest()
 request.job_id = "{job_id}"
 response = client.show_member_health_check_job(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
```

```
WithCredential(auth).
Build())

request := &model.ShowMemberHealthCheckJobRequest{
 request.JobId = "{job_id}"
}
response, err := client.ShowMemberHealthCheckJob(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

# 5.13 Health Check

## 5.13.1 Configuring a Health Check

### Function

This API is used to configure a health check.

### Constraints

This API has the following constraints:

- The security groups must have rules that allow traffic to 100.125.0.0/16.
- If you want to use UDP for health checks, ensure that the protocol of the backend server group is UDP.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/healthmonitors

**Table 5-595** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-596** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-597** Request body parameters

| Parameter     | Mandatory | Type                                              | Description                                                                                                    |
|---------------|-----------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| healthmonitor | Yes       | <a href="#">CreateHealthMonitorOptions</a> object | <b>Definition:</b> Specifies the request parameters for configuring a health check.<br><b>Constraints:</b> N/A |

**Table 5-598** CreateHealthMonitorOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | <b>Definition:</b> Specifies the administrative status of the health check.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The health check function is enabled.</li><li>• <b>false:</b> The health check function is disabled.</li></ul> <b>Default value:</b> true                                                                                                                                                                                                               |
| delay          | Yes       | Integer | <b>Definition:</b> Specifies the interval between health checks, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 50<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                        |
| domain_name    | No        | String  | <b>Definition:</b> Specifies the domain name that HTTP requests are sent to during the health check.<br><b>Constraints:</b> This parameter is available only when <b>type</b> is set to <b>HTTP</b> or <b>HTTPS</b> .<br><b>Range:</b> The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter.<br><b>Default value:</b> The value is left blank by default, indicating that the virtual IP address of the load balancer is used as the destination address of HTTP requests. |



| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| expected_codes   | No        | String  | <b>Definition:</b> Specifies the expected HTTP status code.<br><b>Constraints:</b> This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> or <b>GRPC</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific value, for example, 200</li><li>• A list of values that are separated with commas (,), for example, 200, 202</li><li>• A value range, for example, 200-204</li></ul> <b>Default value:</b> If <b>type</b> is set to <b>GRPC</b> , the default value is <b>0</b> . If <b>type</b> is set to other protocols, the default value is <b>200</b> . |
| http_method      | No        | String  | <b>Definition:</b> Specifies the HTTP method.<br><b>Constraints:</b> This parameter is available when <b>type</b> is set to <b>HTTP</b> or <b>HTTPS</b> .<br><b>Range:</b> <b>GET</b> , <b>HEAD</b> , or <b>POST</b><br><b>Default value:</b> <b>GET</b>                                                                                                                                                                                                                                                                                                                                                         |
| max_retries      | Yes       | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <b>1</b> to <b>10</b><br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                              |
| max_retries_down | No        | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <b>1</b> to <b>10</b><br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                              |

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| monitor_port | No        | Integer | <b>Definition:</b> Specifies the health check port.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter is required if <b>any_port_enable</b> is set to <b>true</b> for the backend server group.</li><li>• If the backend server group protocol is IP, <b>monitor_port</b> cannot be <b>0</b>.</li></ul> <b>Range:</b> 1 to 65535, or <b>null</b> (the port of a backend server will be used by default).<br><b>Default value:</b> <b>null</b> |
| name         | No        | String  | <b>Definition:</b> Specifies the health check name.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                          |
| pool_id      | Yes       | String  | <b>Definition:</b> Specifies the ID of the backend server group for which the health check is configured.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                    |
| project_id   | No        | String  | Specifies the project ID of the health check.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                |
| timeout      | Yes       | Integer | <b>Definition:</b> Specifies the maximum time required for waiting for a response from the health check, in seconds. It is recommended that you set the value less than that of parameter <b>delay</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                     |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type      | Yes       | String | <p><b>Definition:</b> Specifies the health check protocol.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If the protocol of the backend server is QUIC, the value can only be <b>UDP_CONNECT</b>.</li><li>• If the protocol of the backend server is UDP, the value can only be <b>UDP_CONNECT</b>.</li><li>• If the protocol of the backend server is TCP, the value can only be <b>TCP</b>, <b>HTTP</b>, or <b>HTTPS</b>.</li><li>• If the protocol of the backend server is IP, the value can only be <b>TCP</b>, <b>HTTP</b>, or <b>HTTPS</b>.</li><li>• If the protocol of the backend server is HTTP, the value can only be <b>TCP</b>, <b>HTTP</b>, <b>HTTPS</b>, <b>GRPC</b>, or <b>TLS</b>.</li><li>• If the protocol of the backend server is HTTPS, the value can only be <b>TCP</b>, <b>HTTP</b>, <b>HTTPS</b>, <b>GRPC</b>, or <b>TLS</b>.</li><li>• If the protocol of the backend server is GRPC, the value can only be <b>TCP</b>, <b>HTTP</b>, <b>HTTPS</b>, <b>GRPC</b>, or <b>TLS</b>.</li><li>• If the protocol of the backend server is GRPCS, the value can only be <b>TCP</b>, <b>HTTP</b>, <b>HTTPS</b>, <b>GRPC</b>, or <b>TLS</b>.</li><li>• If the protocol of the backend server is TLS, the value can only be <b>TCP</b>, <b>HTTP</b>, <b>HTTPS</b>, <b>GRPC</b>, or <b>TLS</b>.</li></ul> <p><b>Range:</b> The value can be <b>TCP</b>, <b>UDP_CONNECT</b>, <b>HTTP</b>, <b>HTTPS</b>, <b>GRPC</b>, or <b>TLS</b>.</p> |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |        | <b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| url_path  | No        | String | <b>Definition:</b> Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /.<br><b>Constraints:</b> This parameter is available only when <b>type</b> is set to <b>HTTP</b> or <b>HTTPS</b> .<br><b>Range:</b> The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set: _~!()*[]@\$^',+.<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 201

**Table 5-599** Response body parameters

| Parameter     | Type                                 | Description                                                                                                                                                                          |
|---------------|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id    | String                               | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| healthmonitor | <a href="#">HealthMonitor</a> object | <b>Definition:</b> Specifies the response parameters for configuring a health check.<br><b>Constraints:</b> N/A                                                                      |

**Table 5-600** HealthMonitor

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                          |
|------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up   | Boolean | <b>Definition:</b> Specifies the administrative status of the health check.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The health check function is enabled.</li><li>• <b>false:</b> The health check function is disabled.</li></ul>                                     |
| delay            | Integer | <b>Definition:</b> Specifies the interval between health checks, in seconds.<br><b>Range: 1 to 50</b>                                                                                                                                                                                                |
| domain_name      | String  | <b>Definition:</b> Specifies the domain name that HTTP requests are sent to during the health check.<br><b>Range:</b> The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter.                                                                |
| expected_codes   | String  | <b>Definition:</b> Specifies the expected HTTP status code.<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific value, for example, 200</li><li>• A list of values that are separated with commas (,), for example, 200, 202</li><li>• A value range, for example, 200-204</li></ul> |
| http_method      | String  | <b>Definition:</b> Specifies the HTTP method.<br><b>Range: GET, HEAD, or POST</b>                                                                                                                                                                                                                    |
| id               | String  | Specifies the health check ID.<br><b>Default value:</b> N/A                                                                                                                                                                                                                                          |
| max_retries      | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> .<br><b>Range: 1 to 10</b>                                                                                                        |
| max_retries_down | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> .<br><b>Range: 1 to 10</b>                                                                                                        |

| Parameter    | Type                                     | Description                                                                                                                                                                                                                                                                                                                                                                |
|--------------|------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| monitor_port | Integer                                  | <b>Definition:</b> Specifies the health check port.<br><b>Range:</b> 1 to 65535, or <b>null</b> (the port of a backend server will be used by default).                                                                                                                                                                                                                    |
| name         | String                                   | <b>Definition:</b> Specifies the health check name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                   |
| pools        | Array of <a href="#">PoolRef</a> objects | Specifies the IDs of the backend server groups for which the health check is configured. Only one ID will be returned.<br><b>Range:</b> N/A                                                                                                                                                                                                                                |
| project_id   | String                                   | <b>Definition:</b> Specifies the project ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                          |
| timeout      | Integer                                  | <b>Definition:</b> Specifies the maximum time required for waiting for a response from the health check, in seconds.<br><b>Range:</b> N/A                                                                                                                                                                                                                                  |
| type         | String                                   | <b>Definition:</b> Specifies the health check protocol.<br><b>Range:</b> The value can be <b>TCP</b> , <b>UDP_CONNECT</b> , <b>HTTP</b> , <b>HTTPS</b> , <b>GRPC</b> , or <b>TLS</b> .                                                                                                                                                                                     |
| url_path     | String                                   | <b>Definition:</b> Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /.<br><b>Range:</b> The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set: _~!()*[]@\$^'+. |

| Parameter  | Type   | Description                                                                                                                                                                                                                                                                                                                             |
|------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| created_at | String | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| updated_at | String | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.   |

**Table 5-601** PoolRef

| Parameter | Type   | Description                                                                    |
|-----------|--------|--------------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A |

## Example Requests

Configuring a health check for an HTTP backend server group

```
POST https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/healthmonitors
```

```
{
 "healthmonitor" : {
 "name" : "My Healthmonitor",
 "max_retries" : 3,
 "pool_id" : "488acc50-6bcf-423d-8f0a-0f4184f5b8a0",
 "type" : "HTTP",
 "timeout" : 30,
 "delay" : 1
 }
}
```

## Example Responses

**Status code: 201**

Successful request.

```
{
 "request_id": "0e837340-f1bd-4037-8f61-9923d0f0b19e",
 "healthmonitor": {
 "name": "elbv3_l2_2024_08_08_16_55_06",
 "monitor_port": null,
 "id": "00b42a6a-0a16-47af-be4e-dc821fc316a3",
 "project_id": "0c1503d710984bad92306faea3654dfd",
 "domain_name": null,
 "delay": 1,
 "max_retries": 1,
 "max_retries_down": 1,
 "pools": [{
 "id": "c73600be-e3af-4d9f-bec2-f7c4ccf84b33"
 }],
 "admin_state_up": true,
 "timeout": 1,
 "type": "HTTP",
 "expected_codes": "200",
 "url_path": "/",
 "http_method": "HEAD",
 "created_at": "2024-08-08T09:00:34Z",
 "updated_at": "2024-08-08T09:00:34Z"
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

- Configuring a health check for an HTTP backend server group

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CreateHealthMonitorSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 CreateHealthMonitorRequest request = new CreateHealthMonitorRequest();
```



```
CreateHealthMonitorRequestBody body = new CreateHealthMonitorRequestBody();
CreateHealthMonitorOption healthmonitorbody = new CreateHealthMonitorOption();
healthmonitorbody.withDelay(1)
 .withMaxRetries(3)
 .withName("My Healthmonitor")
 .withPoolId("488acc50-6bcf-423d-8f0a-0f4184f5b8a0")
 .withTimeout(30)
 .withType("HTTP");
body.withHealthmonitor(healthmonitorbody);
request.withBody(body);
try {
 CreateHealthMonitorResponse response = client.createHealthMonitor(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

- **Configuring a health check for an IP backend server group**

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CreateHealthMonitorSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 // running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 // environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 CreateHealthMonitorRequest request = new CreateHealthMonitorRequest();
 CreateHealthMonitorRequestBody body = new CreateHealthMonitorRequestBody();
 CreateHealthMonitorOption healthmonitorbody = new CreateHealthMonitorOption();
 healthmonitorbody.withDelay(1)
 .withMaxRetries(3)
 .withMonitorPort(80)
 .withName("My Healthmonitor")
 .withPoolId("488acc50-6bcf-423d-8f0a-0f4184f5b8a0")
```

```
 .withTimeout(30)
 .withType("HTTP");
body.withHealthmonitor(healthmonitorbody);
request.withBody(body);
try {
 CreateHealthMonitorResponse response = client.createHealthMonitor(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

- Configuring a health check for an HTTP backend server group

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateHealthMonitorRequest()
 healthmonitorbody = CreateHealthMonitorOption(
 delay=1,
 max_retries=3,
 name="My Healthmonitor",
 pool_id="488acc50-6bcf-423d-8f0a-0f4184f5b8a0",
 timeout=30,
 type="HTTP"
)
 request.body = CreateHealthMonitorRequestBody(
 healthmonitor=healthmonitorbody
)
 response = client.create_health_monitor(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
```

```
print(e.error_code)
print(e.error_msg)
```

- **Configuring a health check for an IP backend server group**

```
coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 # security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 # environment variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before
 # running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 # environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateHealthMonitorRequest()
 healthmonitorbody = CreateHealthMonitorOption(
 delay=1,
 max_retries=3,
 monitor_port=80,
 name="My Healthmonitor",
 pool_id="488acc50-6bcf-423d-8f0a-0f4184f5b8a0",
 timeout=30,
 type="HTTP"
)
 request.body = CreateHealthMonitorRequestBody(
 healthmonitor=healthmonitorbody
)
 response = client.create_health_monitor(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

- **Configuring a health check for an HTTP backend server group**

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
```

```
// In this example, AK and SK are stored in environment variables for authentication. Before
running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.CreateHealthMonitorRequest{
 nameHealthmonitor:= "My Healthmonitor"
 healthmonitorbody := &model.CreateHealthMonitorOption{
 Delay: int32(1),
 MaxRetries: int32(3),
 Name: &nameHealthmonitor,
 PoolId: "488acc50-6bcf-423d-8f0a-0f4184f5b8a0",
 Timeout: int32(30),
 Type: "HTTP",
 }
}
request.Body = &model.CreateHealthMonitorRequestBody{
 Healthmonitor: healthmonitorbody,
}
response, err := client.CreateHealthMonitor(request)
if err == nil {
 fmt.Printf("%v\n", response)
} else {
 fmt.Println(err)
}
}
```

- **Configuring a health check for an IP backend server group**

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 security risk. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before
 running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local
 environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
```

```
WithRegion(region.ValueOf("<YOUR REGION>")).
WithCredential(auth).
Build()

request := &model.CreateHealthMonitorRequest{}
monitorPortHealthmonitor:= int32(80)
nameHealthmonitor:= "My Healthmonitor"
healthmonitorbody := &model.CreateHealthMonitorOption{
 Delay: int32(1),
 MaxRetries: int32(3),
 MonitorPort: &monitorPortHealthmonitor,
 Name: &nameHealthmonitor,
 PoolId: "488acc50-6bcf-423d-8f0a-0f4184f5b8a0",
 Timeout: int32(30),
 Type: "HTTP",
}
request.Body = &model.CreateHealthMonitorRequestBody{
 Healthmonitor: healthmonitorbody,
}
response, err := client.CreateHealthMonitor(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 201         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.13.2 Querying Health Checks

### Function

This API is used to query all health checks.

### Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query.
- Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

## Calling Method

For details, see [Calling APIs](#).

## URI

GET /v3/{project\_id}/elb/healthmonitors

**Table 5-602** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

**Table 5-603** Query Parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker    | No        | String  | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| limit     | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000                                                                                                                                                                                                                                                                  |

| Parameter    | Mandatory | Type              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse | No        | Boolean           | <b>Definition:</b> Specifies whether to use reverse query.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true</b>: Query resources on the previous page.</li><li>• <b>false</b>: Query resources on the next page.</li></ul> <b>Default value:</b> false |
| id           | No        | Array of strings  | <b>Definition:</b> Specifies the health check ID.<br>Multiple IDs can be used for query in the format of <i>id=xxx&amp;id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                             |
| monitor_port | No        | Array of integers | <b>Definition:</b> Specifies the port used for the health check.<br>Multiple ports can be used for query in the format of <i>monitor_port=xxx&amp;monitor_port=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                        |

| Parameter   | Mandatory | Type              | Description                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|-----------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_name | No        | Array of strings  | <b>Definition:</b> Specifies the domain name to which HTTP requests are sent during the health check.<br>Multiple domain names can be used for query in the format of <i>domain_name=xxx&amp;domain_name=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter.<br><b>Default value:</b> N/A |
| name        | No        | Array of strings  | <b>Definition:</b> Specifies the health check name.<br>Multiple names can be used for query in the format of <i>name=xxx&amp;name=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                    |
| delay       | No        | Array of integers | <b>Definition:</b> Specifies the interval between health checks, in seconds.<br>Multiple intervals can be used for query in the format of <i>delay=xxx&amp;delay=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 50<br><b>Default value:</b> N/A                                                                                                                                                 |



| Parameter        | Mandatory | Type              | Description                                                                                                                                                                                                                                                                                                                                                                |
|------------------|-----------|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| max_retries      | No        | Array of integers | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> .<br><br>Multiple values can be used for query in the format of <i>max_retries=xxx&amp;max_retries=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 10<br><b>Default value:</b> N/A           |
| admin_state_up   | No        | Boolean           | <b>Definition:</b> Specifies the administrative status of the health check.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The health check function is enabled.</li><li>• <b>false:</b> The health check function is disabled.</li></ul> <b>Default value:</b> N/A                                                      |
| max_retries_down | No        | Array of integers | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> .<br><br>Multiple values can be used for query in the format of <i>max_retries_down=xxx&amp;max_retries_down=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 10<br><b>Default value:</b> N/A |
| timeout          | No        | Integer           | <b>Definition:</b> Specifies the maximum time required for waiting for a response from the health check, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                          |

| Parameter      | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type           | No        | Array of strings | <b>Definition:</b> Specifies the health check protocol.<br>Multiple protocols can be used for query in the format of <i>type=xxx&amp;type=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> TCP, UDP_CONNECT, HTTP, HTTPS, TLS, or GRPC<br><b>Default value:</b> N/A                                                                                                                                                                                                     |
| expected_codes | No        | Array of strings | <b>Definition:</b> Specifies the expected HTTP status code.<br>Multiple status codes can be used for query in the format of <i>expected_codes=xxx&amp;expected_codes=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific value, for example, 200</li><li>• A list of values that are separated with commas (,), for example, 200, 202</li><li>• A value range, for example, 200-204</li></ul> <b>Default value:</b> N/A |
| url_path       | No        | Array of strings | <b>Definition:</b> Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /.<br>Multiple paths can be used for query in the format of <i>url_path=xxx&amp;url_path=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                     |

| Parameter             | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| http_method           | No        | Array of strings | <b>Definition:</b> Specifies the HTTP method.<br>Multiple methods can be used for query in the format of <i>http_method=xxx&amp;http_method=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> GET, HEAD, or POST<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| enterprise_project_id | No        | Array of strings | <b>Definition:</b> Specifies the ID of the enterprise project.<br>Multiple values can be used for query in the format of: <i>enterprise_project_id=xxx&amp;enterprise_project_id=xxx</i> .<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If <b>enterprise_project_id</b> is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:healthmonitors:list</b> permission must be assigned to the user group.</li><li>• If <b>enterprise_project_id</b> is specified, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:healthmonitors:list</b> permission are queried.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-604** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200**Table 5-605** Response body parameters

| Parameter      | Type                                  | Description                                                                                                                                                                          |
|----------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id     | String                                | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| page_info      | <b>PageInfo</b> object                | <b>Definition:</b> Specifies the pagination information.                                                                                                                             |
| healthmonitors | Array of <b>HealthMonitor</b> objects | <b>Definition:</b> Specifies the health check.                                                                                                                                       |

**Table 5-606** PageInfo

| Parameter       | Type   | Description                                                                                                                                                                                                                          |
|-----------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |

| Parameter     | Type    | Description                                                                                                                                                         |
|---------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| next_marker   | String  | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A |
| current_count | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A                                                               |

**Table 5-607** HealthMonitor

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                          |
|----------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the health check.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The health check function is enabled.</li><li>• <b>false:</b> The health check function is disabled.</li></ul>                                     |
| delay          | Integer | <b>Definition:</b> Specifies the interval between health checks, in seconds.<br><b>Range:</b> 1 to 50                                                                                                                                                                                                |
| domain_name    | String  | <b>Definition:</b> Specifies the domain name that HTTP requests are sent to during the health check.<br><b>Range:</b> The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter.                                                                |
| expected_codes | String  | <b>Definition:</b> Specifies the expected HTTP status code.<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific value, for example, 200</li><li>• A list of values that are separated with commas (,), for example, 200, 202</li><li>• A value range, for example, 200-204</li></ul> |
| http_method    | String  | <b>Definition:</b> Specifies the HTTP method.<br><b>Range:</b> GET, HEAD, or POST                                                                                                                                                                                                                    |

| Parameter        | Type                                     | Description                                                                                                                                                                                   |
|------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id               | String                                   | Specifies the health check ID.<br><b>Default value:</b> N/A                                                                                                                                   |
| max_retries      | Integer                                  | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> .<br><b>Range:</b> 1 to 10 |
| max_retries_down | Integer                                  | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> .<br><b>Range:</b> 1 to 10 |
| monitor_port     | Integer                                  | <b>Definition:</b> Specifies the health check port.<br><b>Range:</b> 1 to 65535, or <b>null</b> (the port of a backend server will be used by default).                                       |
| name             | String                                   | <b>Definition:</b> Specifies the health check name.<br><b>Range:</b> N/A                                                                                                                      |
| pools            | Array of <a href="#">PoolRef</a> objects | Specifies the IDs of the backend server groups for which the health check is configured. Only one ID will be returned.<br><b>Range:</b> N/A                                                   |
| project_id       | String                                   | <b>Definition:</b> Specifies the project ID.<br><b>Range:</b> N/A                                                                                                                             |
| timeout          | Integer                                  | <b>Definition:</b> Specifies the maximum time required for waiting for a response from the health check, in seconds.<br><b>Range:</b> N/A                                                     |
| type             | String                                   | <b>Definition:</b> Specifies the health check protocol.<br><b>Range:</b> The value can be <b>TCP</b> , <b>UDP_CONNECT</b> , <b>HTTP</b> , <b>HTTPS</b> , <b>GRPC</b> , or <b>TLS</b> .        |

| Parameter  | Type   | Description                                                                                                                                                                                                                                                                                                                                                                |
|------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| url_path   | String | <b>Definition:</b> Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /.<br><b>Range:</b> The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set: _~!()*[]@\$^'+. |
| created_at | String | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                    |
| updated_at | String | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                      |

**Table 5-608** PoolRef

| Parameter | Type   | Description                                                                    |
|-----------|--------|--------------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A |

## Example Requests

### Querying health checks

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/healthmonitors
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "request_id" : "306b2ed05d05341a2157906d60c06718",
 "healthmonitors" : [{
 "name" : "my-healthmonitor-1",
 "monitor_port" : null,
 "id" : "00b42a6a-0a16-47af-be4e-dc821fc316a3",
 "project_id" : "0c1503d710984bad92306faea3654dfd",
 "domain_name" : null,
 "delay" : 1,
 "max_retries" : 1,
 "max_retries_down" : 1,
 "pools" : [{
 "id" : "c73600be-e3af-4d9f-bec2-f7c4ccf84b33"
 }],
 "admin_state_up" : true,
 "timeout" : 1,
 "type" : "HTTP",
 "expected_codes" : "200",
 "url_path" : "/",
 "http_method" : "HEAD",
 "created_at" : "2024-08-08T09:00:34Z",
 "updated_at" : "2024-08-08T09:00:34Z"
 }, {
 "name" : "my-healthmonitor-2",
 "monitor_port" : null,
 "id" : "00d4e6b4-587a-479a-a8ab-662b51f70170",
 "project_id" : "0c1503d710984bad92306faea3654dfd",
 "domain_name" : null,
 "delay" : 5,
 "max_retries" : 3,
 "max_retries_down" : 3,
 "pools" : [{
 "id" : "e74c1541-e1d5-497c-9af3-3166202ed3f1"
 }],
 "admin_state_up" : true,
 "timeout" : 3,
 "type" : "TCP",
 "expected_codes" : "200",
 "url_path" : "/",
 "http_method" : "GET",
 "created_at" : "2024-11-07T13:35:18Z",
 "updated_at" : "2024-11-07T13:35:18Z"
 }],
 "page_info" : {
 "next_marker" : "00d4e6b4-587a-479a-a8ab-662b51f70170",
 "previous_marker" : "00b42a6a-0a16-47af-be4e-dc821fc316a3",
 "current_count" : 2
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
```



```
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListHealthMonitorsSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ListHealthMonitorsRequest request = new ListHealthMonitorsRequest();
 try {
 ListHealthMonitorsResponse response = client.listHealthMonitors(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.getenv("CLOUD_SDK_AK")
 sk = os.getenv("CLOUD_SDK_SK")
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
```

```
.with_credentials(credentials) \
.with_region(ElbRegion.value_of("<YOUR REGION>")) \
.build()

try:
 request = ListHealthMonitorsRequest()
 response = client.list_health_monitors(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ListHealthMonitorsRequest{}
 response, err := client.ListHealthMonitors(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.13.3 Viewing the Details of a Health Check

### Function

This API is used to view the details of a health check.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/healthmonitors/{healthmonitor\_id}

**Table 5-609** Path Parameters

| Parameter        | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id       | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| healthmonitor_id | Yes       | String | <b>Definition:</b> Specifies the health check ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                             |

## Request Parameters

**Table 5-610** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 200****Table 5-611** Response body parameters

| Parameter     | Type                        | Description                                                                                                                                                                          |
|---------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id    | String                      | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| healthmonitor | <b>HealthMonitor</b> object | <b>Definition:</b> Specifies the health check.                                                                                                                                       |

**Table 5-612** HealthMonitor

| Parameter      | Type    | Description                                                                                                                                                                                                                                                  |
|----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the health check.<br><b>Range:</b> <ul style="list-style-type: none"><li><b>true:</b> The health check function is enabled.</li><li><b>false:</b> The health check function is disabled.</li></ul> |
| delay          | Integer | <b>Definition:</b> Specifies the interval between health checks, in seconds.<br><b>Range:</b> 1 to 50                                                                                                                                                        |

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                          |
|------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_name      | String  | <b>Definition:</b> Specifies the domain name that HTTP requests are sent to during the health check.<br><b>Range:</b> The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter.                                                                |
| expected_codes   | String  | <b>Definition:</b> Specifies the expected HTTP status code.<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific value, for example, 200</li><li>• A list of values that are separated with commas (,), for example, 200, 202</li><li>• A value range, for example, 200-204</li></ul> |
| http_method      | String  | <b>Definition:</b> Specifies the HTTP method.<br><b>Range:</b> GET, HEAD, or POST                                                                                                                                                                                                                    |
| id               | String  | Specifies the health check ID.<br><b>Default value:</b> N/A                                                                                                                                                                                                                                          |
| max_retries      | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> .<br><b>Range:</b> 1 to 10                                                                                                        |
| max_retries_down | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> .<br><b>Range:</b> 1 to 10                                                                                                        |
| monitor_port     | Integer | <b>Definition:</b> Specifies the health check port.<br><b>Range:</b> 1 to 65535, or <b>null</b> (the port of a backend server will be used by default).                                                                                                                                              |
| name             | String  | <b>Definition:</b> Specifies the health check name.<br><b>Range:</b> N/A                                                                                                                                                                                                                             |

| Parameter  | Type                                     | Description                                                                                                                                                                                                                                                                                                                                                                             |
|------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pools      | Array of <a href="#">PoolRef</a> objects | Specifies the IDs of the backend server groups for which the health check is configured. Only one ID will be returned.<br><b>Range:</b> N/A                                                                                                                                                                                                                                             |
| project_id | String                                   | <b>Definition:</b> Specifies the project ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                       |
| timeout    | Integer                                  | <b>Definition:</b> Specifies the maximum time required for waiting for a response from the health check, in seconds.<br><b>Range:</b> N/A                                                                                                                                                                                                                                               |
| type       | String                                   | <b>Definition:</b> Specifies the health check protocol.<br><b>Range:</b> The value can be <b>TCP</b> , <b>UDP_CONNECT</b> , <b>HTTP</b> , <b>HTTPS</b> , <b>GRPC</b> , or <b>TLS</b> .                                                                                                                                                                                                  |
| url_path   | String                                   | <b>Definition:</b> Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /.<br><b>Range:</b> The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set: <code>_~!()*[]@\$^'+.</code> |
| created_at | String                                   | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the format of <code>yyyy-MM-dd'T'HH:mm:ss'Z'</code> .<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                           |

| Parameter  | Type   | Description                                                                                                                                                                                                                                                                                                                               |
|------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at | String | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |

Table 5-613 PoolRef

| Parameter | Type   | Description                                                                    |
|-----------|--------|--------------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A |

Example Requests

Querying the details of a health check

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/healthmonitors/c2b210b2-60c4-449d-91e2-9e9ea1dd7441
```

Example Responses

Status code: 200

Successful request.

```
{
 "healthmonitor": {
 "name": "my-healthmonitor",
 "monitor_port": null,
 "id": "00b42a6a-0a16-47af-be4e-dc821fc316a3",
 "project_id": "0c1503d710984bad92306faea3654dfd",
 "domain_name": null,
 "delay": 1,
 "max_retries": 1,
 "max_retries_down": 1,
 "pools": [{
 "id": "c73600be-e3af-4d9f-be2-f7c4ccf84b33"
 }],
 "admin_state_up": true,
 "timeout": 1,
 "type": "HTTP",
 "expected_codes": "200",
 "url_path": "/",
 "http_method": "HEAD",
 "created_at": "2024-08-08T09:00:34Z",
 "updated_at": "2024-08-08T09:00:34Z"
 },
}
```

```
"request_id" : "08660101bcaff627f2f48730cf837e5f"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowHealthMonitorSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowHealthMonitorRequest request = new ShowHealthMonitorRequest();
 request.withHealthmonitorId("{healthmonitor_id}");
 try {
 ShowHealthMonitorResponse response = client.showHealthMonitor(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrMsg());
 }
 }
}
```

### Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
```



```
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ShowHealthMonitorRequest()
 request.healthmonitor_id = "{healthmonitor_id}"
 response = client.show_health_monitor(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ShowHealthMonitorRequest{}
 request.HealthmonitorId = "{healthmonitor_id}"
 response, err := client.ShowHealthMonitor(request)
```

```
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.13.4 Updating a Health Check

### Function

This API is used to update a health check.

### Constraints

The health check can be updated only when the provisioning status of the associated load balancer is **ACTIVE**.

### Calling Method

For details, see [Calling APIs](#).

### URI

PUT /v3/{project\_id}/elb/healthmonitors/{healthmonitor\_id}

**Table 5-614** Path Parameters

| Parameter        | Mandatory | Type   | Description                                                                                                                    |
|------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------|
| healthmonitor_id | Yes       | String | <b>Definition:</b> Specifies the health check ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-615** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-616** Request body parameters

| Parameter     | Mandatory | Type                                             | Description                                                               |
|---------------|-----------|--------------------------------------------------|---------------------------------------------------------------------------|
| healthmonitor | Yes       | <a href="#">UpdateHealthMonitorOption</a> object | <b>Definition:</b> Specifies the health check.<br><b>Constraints:</b> N/A |

**Table 5-617** UpdateHealthMonitorOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | <b>Definition:</b> Specifies the administrative status of the health check.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The health check function is enabled.</li><li>• <b>false:</b> The health check function is disabled.</li></ul> <b>Default value:</b> N/A                                                                                                                                                                                                                                                                  |
| delay          | No        | Integer | <b>Definition:</b> Specifies the interval between health checks, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 50<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                          |
| domain_name    | No        | String  | <b>Definition:</b> Specifies the domain name that HTTP requests are sent to during the health check.<br><b>Constraints:</b> This parameter is available only when <b>type</b> is set to <b>HTTP</b> or <b>HTTPS</b> .<br><b>Range:</b> The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter. The value cannot be left blank, but can be specified as null or cannot be passed, indicating that the virtual IP address of the load balancer is used as the destination address of HTTP requests.<br><b>Default value:</b> N/A |

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| expected_codes   | No        | String  | <b>Definition:</b> Specifies the expected HTTP status code.<br><b>Constraints:</b> This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> or <b>GRPC</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific value, for example, 200</li><li>• A list of values that are separated with commas (,), for example, 200, 202</li><li>• A value range, for example, 200-204</li></ul> <b>Default value:</b> N/A |
| http_method      | No        | String  | <b>Definition:</b> Specifies the HTTP method.<br><b>Constraints:</b> This parameter is available when <b>type</b> is set to <b>HTTP</b> or <b>HTTPS</b> .<br><b>Range:</b> GET, HEAD, or POST<br><b>Default value:</b> GET                                                                                                                                                                                                                                        |
| max_retries      | No        | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 10<br><b>Default value:</b> N/A                                                                                                                                                                                                             |
| max_retries_down | No        | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 10<br><b>Default value:</b> N/A                                                                                                                                                                                                             |

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| monitor_port | No        | Integer | <b>Definition:</b> Specifies the health check port.<br><b>Constraints:</b> If the backend server group protocol is IP, <b>monitor_port</b> cannot be 0.<br><b>Range:</b> 1 to 65535, or <b>null</b> (the port of a backend server will be used by default).<br><b>Default value:</b> N/A                                                                                                                                                                                                                                      |
| name         | No        | String  | <b>Definition:</b> Specifies the health check name.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                              |
| timeout      | No        | Integer | <b>Definition:</b> Specifies the maximum time required for waiting for a response from the health check, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> It is recommended that you set the value less than that of parameter <b>delay</b> .<br><b>Default value:</b> N/A                                                                                                                                                                                                                                             |
| url_path     | No        | String  | <b>Definition:</b> Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /.<br><b>Constraints:</b> This parameter is available only when <b>type</b> is set to <b>HTTP</b> or <b>HTTPS</b> .<br><b>Range:</b> The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set: _;~!()*[*]@\$^: ',+.<br><b>Default value:</b> N/A |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type      | No        | String | <p><b>Definition:</b> Specifies the health check protocol.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If the protocol of the backend server is QUIC, the value can only be <b>UDP_CONNECT</b>.</li><li>• If the protocol of the backend server is UDP, the value can only be <b>UDP_CONNECT</b>.</li><li>• If the protocol of the backend server is TCP, the value can only be <b>TCP</b>, <b>HTTP</b>, or <b>HTTPS</b>.</li><li>• If the protocol of the backend server is IP, the value can only be <b>TCP</b>, <b>HTTP</b>, or <b>HTTPS</b>.</li><li>• If the protocol of the backend server is HTTP, the value can only be <b>TCP</b>, <b>HTTP</b>, <b>HTTPS</b>, <b>GRPC</b>, or <b>TLS</b>.</li><li>• If the protocol of the backend server is HTTPS, the value can only be <b>TCP</b>, <b>HTTP</b>, <b>HTTPS</b>, <b>GRPC</b>, or <b>TLS</b>.</li><li>• If the protocol of the backend server is GRPC, the value can only be <b>TCP</b>, <b>HTTP</b>, <b>HTTPS</b>, <b>GRPC</b>, or <b>TLS</b>.</li><li>• If the protocol of the backend server is GRPCS, the value can only be <b>TCP</b>, <b>HTTP</b>, <b>HTTPS</b>, <b>GRPC</b>, or <b>TLS</b>.</li><li>• If the protocol of the backend server is TLS, the value can only be <b>TCP</b>, <b>HTTP</b>, <b>HTTPS</b>, <b>GRPC</b>, or <b>TLS</b>.</li></ul> <p><b>Range:</b> The value can be <b>TCP</b>, <b>UDP_CONNECT</b>, <b>HTTP</b>, <b>HTTPS</b>, <b>GRPC</b>, or <b>TLS</b>.</p> |

| Parameter | Mandatory | Type | Description               |
|-----------|-----------|------|---------------------------|
|           |           |      | <b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-618** Response body parameters

| Parameter     | Type                        | Description                                                                                                                                                                          |
|---------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id    | String                      | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| healthmonitor | <b>HealthMonitor</b> object | <b>Definition:</b> Specifies the health check.                                                                                                                                       |

**Table 5-619** HealthMonitor

| Parameter      | Type    | Description                                                                                                                                                                                                                                                      |
|----------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the health check.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> The health check function is enabled.</li><li>• <b>false:</b> The health check function is disabled.</li></ul> |
| delay          | Integer | <b>Definition:</b> Specifies the interval between health checks, in seconds.<br><b>Range:</b> 1 to 50                                                                                                                                                            |
| domain_name    | String  | <b>Definition:</b> Specifies the domain name that HTTP requests are sent to during the health check.<br><b>Range:</b> The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter.                            |



| Parameter        | Type                                     | Description                                                                                                                                                                                                                                                                                          |
|------------------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| expected_codes   | String                                   | <b>Definition:</b> Specifies the expected HTTP status code.<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific value, for example, 200</li><li>• A list of values that are separated with commas (,), for example, 200, 202</li><li>• A value range, for example, 200-204</li></ul> |
| http_method      | String                                   | <b>Definition:</b> Specifies the HTTP method.<br><b>Range:</b> GET, HEAD, or POST                                                                                                                                                                                                                    |
| id               | String                                   | Specifies the health check ID.<br><b>Default value:</b> N/A                                                                                                                                                                                                                                          |
| max_retries      | Integer                                  | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> .<br><b>Range:</b> 1 to 10                                                                                                        |
| max_retries_down | Integer                                  | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> .<br><b>Range:</b> 1 to 10                                                                                                        |
| monitor_port     | Integer                                  | <b>Definition:</b> Specifies the health check port.<br><b>Range:</b> 1 to 65535, or <b>null</b> (the port of a backend server will be used by default).                                                                                                                                              |
| name             | String                                   | <b>Definition:</b> Specifies the health check name.<br><b>Range:</b> N/A                                                                                                                                                                                                                             |
| pools            | Array of <a href="#">PoolRef</a> objects | Specifies the IDs of the backend server groups for which the health check is configured. Only one ID will be returned.<br><b>Range:</b> N/A                                                                                                                                                          |
| project_id       | String                                   | <b>Definition:</b> Specifies the project ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                    |

| Parameter  | Type    | Description                                                                                                                                                                                                                                                                                                                                                                |
|------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| timeout    | Integer | <b>Definition:</b> Specifies the maximum time required for waiting for a response from the health check, in seconds.<br><b>Range:</b> N/A                                                                                                                                                                                                                                  |
| type       | String  | <b>Definition:</b> Specifies the health check protocol.<br><b>Range:</b> The value can be <b>TCP</b> , <b>UDP_CONNECT</b> , <b>HTTP</b> , <b>HTTPS</b> , <b>GRPC</b> , or <b>TLS</b> .                                                                                                                                                                                     |
| url_path   | String  | <b>Definition:</b> Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /.<br><b>Range:</b> The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set: _~!()*[]@\$^'+. |
| created_at | String  | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                    |
| updated_at | String  | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                      |

Table 5-620 PoolRef

| Parameter | Type   | Description                                                                    |
|-----------|--------|--------------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A |

Example Requests

Modifying the interval between health checks

```
PUT https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/healthmonitors/c2b210b2-60c4-449d-91e2-9e9ea1dd7441
{
 "healthmonitor" : {
 "name" : "My Healthmonitor update",
 "max_retries" : 10,
 "delay" : 10
 }
}
```

Example Responses

Status code: 200

Successful request.

```
{
 "request_id" : "0e837340-f1bd-4037-8f61-9923d0f0b19e",
 "healthmonitor" : {
 "name" : "elbv3_l2_2024_08_08_16_55_06",
 "monitor_port" : null,
 "id" : "00b42a6a-0a16-47af-be4e-dc821fc316a3",
 "project_id" : "0c1503d710984bad92306faea3654dfd",
 "domain_name" : null,
 "delay" : 1,
 "max_retries" : 1,
 "max_retries_down" : 1,
 "pools" : [{
 "id" : "c73600be-e3af-4d9f-bec2-f7c4ccf84b33"
 }],
 "admin_state_up" : true,
 "timeout" : 1,
 "type" : "HTTP",
 "expected_codes" : "200",
 "url_path" : "/",
 "http_method" : "HEAD",
 "created_at" : "2024-08-08T09:00:34Z",
 "updated_at" : "2024-08-08T09:00:34Z"
 }
}
```

SDK Sample Code

The SDK sample code is as follows.

Java

Modifying the interval between health checks

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class UpdateHealthMonitorSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 UpdateHealthMonitorRequest request = new UpdateHealthMonitorRequest();
 request.withHealthmonitorId("{healthmonitor_id}");
 UpdateHealthMonitorRequestBody body = new UpdateHealthMonitorRequestBody();
 UpdateHealthMonitorOption healthmonitorbody = new UpdateHealthMonitorOption();
 healthmonitorbody.withDelay(10)
 .withMaxRetries(10)
 .withName("My Healthmonitor update");
 body.withHealthmonitor(healthmonitorbody);
 request.withBody(body);
 try {
 UpdateHealthMonitorResponse response = client.updateHealthMonitor(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

### Modifying the interval between health checks

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
```

```
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = UpdateHealthMonitorRequest()
 request.healthmonitor_id = "{healthmonitor_id}"
 healthmonitorbody = UpdateHealthMonitorOption(
 delay=10,
 max_retries=10,
 name="My Healthmonitor update"
)
 request.body = UpdateHealthMonitorRequestBody(
 healthmonitor=healthmonitorbody
)
 response = client.update_health_monitor(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Modifying the interval between health checks

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
```

```
elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.UpdateHealthMonitorRequest{}
request.HealthmonitorId = "{healthmonitor_id}"
delayHealthmonitor:= int32(10)
maxRetriesHealthmonitor:= int32(10)
nameHealthmonitor:= "My Healthmonitor update"
healthmonitorbody := &model.UpdateHealthMonitorOption{
 Delay: &delayHealthmonitor,
 MaxRetries: &maxRetriesHealthmonitor,
 Name: &nameHealthmonitor,
}
request.Body = &model.UpdateHealthMonitorRequestBody{
 Healthmonitor: healthmonitorbody,
}
response, err := client.UpdateHealthMonitor(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.13.5 Deleting a Health Check

### Function

This API is used to delete a health check.

### Constraints

The health check can be deleted only when the provisioning status of the associated load balancer is **ACTIVE**.

### Calling Method

For details, see [Calling APIs](#).

URI

DELETE /v3/{project\_id}/elb/healthmonitors/{healthmonitor\_id}

Table 5-621 Path Parameters

| Parameter        | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id       | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| healthmonitor_id | Yes       | String | <b>Definition:</b> Specifies the health check ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                             |

Request Parameters

Table 5-622 Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

Response Parameters

**Status code: 204**  
Successful request.  
None

Example Requests

Deleting a health check

```
DELETE https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/healthmonitors/
c2b210b2-60c4-449d-91e2-9e9ea1dd7441
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeleteHealthMonitorSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 DeleteHealthMonitorRequest request = new DeleteHealthMonitorRequest();
 request.withHealthmonitorId("{healthmonitor_id}");
 try {
 DeleteHealthMonitorResponse response = client.deleteHealthMonitor(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```



## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeleteHealthMonitorRequest()
 request.healthmonitor_id = "{healthmonitor_id}"
 response = client.delete_health_monitor(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
```

```
WithCredential(auth).
Build())

request := &model.DeleteHealthMonitorRequest{
 request.HealthmonitorId = "{healthmonitor_id}"
}
response, err := client.DeleteHealthMonitor(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

# 5.14 Forwarding Policy

## 5.14.1 Adding a Forwarding Policy

### Function

This API is used to add a forwarding policy to a listener.

### Constraints

Forwarding policies can only be added to Layer 7 listeners.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/l7policies

**Table 5-623** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-624** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-625** Request body parameters

| Parameter | Mandatory | Type                                        | Description                                                                    |
|-----------|-----------|---------------------------------------------|--------------------------------------------------------------------------------|
| l7policy  | Yes       | <a href="#">CreateL7PolicyOption</a> object | <b>Definition:</b> Specifies the forwarding policy.<br><b>Constraints:</b> N/A |

**Table 5-626** CreateL7PolicyOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| action         | Yes       | String  | <p><b>Definition:</b> Specifies the action of the forwarding policy.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_LISTENER</b> has the highest priority. If requests are to be redirected to an HTTPS listener, other forwarding policies of the listener will become invalid.</li><li>• If <b>action</b> is set to <b>REDIRECT_TO_POOL</b>, the listener's protocol must be HTTP, HTTPS, or TERMINATED_HTTPS.</li><li>• If <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, the listener's protocol must be HTTP.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL:</b> Requests are forwarded to another backend server group.</li><li>• <b>REDIRECT_TO_LISTENER:</b> Requests are redirected to an HTTPS listener.</li><li>• <b>REDIRECT_TO_URL:</b> Requests are redirected to another URL.</li><li>• <b>FIXED_RESPONSE:</b> A fixed response body is returned.</li></ul> <p><b>Default value:</b> N/A</p> |
| admin_state_up | No        | Boolean | <p><b>Definition:</b> Specifies the administrative status of the forwarding policy.</p> <p><b>Constraints:</b> The value can only be <b>true</b>.</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Parameter   | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description | No        | String  | <b>Definition:</b> Provides supplementary information about the forwarding policy.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                             |
| listener_id | Yes       | String  | <b>Definition:</b> Specifies the ID of the listener with which the forwarding policy is associated.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If <b>action</b> is set to <b>REDIRECT_TO_POOL</b>, the listener's protocol must be <b>HTTP</b> or <b>HTTPS</b>.</li><li>• If <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, the listener's protocol must be <b>HTTP</b>.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| name        | No        | String  | <b>Definition:</b> Specifies the forwarding policy name.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                       |
| position    | No        | Integer | <b>Definition:</b> Specifies the priority of the forwarding policy.<br><b>Constraints:</b> The value cannot be updated.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                           |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| priority  | No        | Integer | <p><b>Definition:</b> Specifies the priority of the forwarding policy. A smaller value indicates a higher priority.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The priority must be unique for forwarding policies of the same listener.</li><li>• This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b>. If this parameter is passed and <b>enhance_l7policy_enable</b> is set to <b>false</b>, an error will be returned.</li><li>• If <b>enhance_l7policy_enable</b> is set to <b>false</b>, forwarding policies are automatically prioritized based on the original policy sorting logic. The priorities of domain names are independent from each other. For the same domain name, the priorities are sorted in the order of exact match (<b>EQUAL_TO</b>), prefix match (<b>STARTS_WITH</b>), and regular expression match (<b>REGEX</b>). If the matching types are the same, the longer the path is, the higher the priority is. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default.</li><li>• This parameter is unsupported for shared load balancers.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, the priority ranges from 0 to 10,000.</li></ul> |

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|            |           |        | <ul style="list-style-type: none"><li>• If <b>action</b> is set to other values, the priority ranges from 1 to 10,000.</li></ul> <b>Default value:</b> <ul style="list-style-type: none"><li>• If this parameter is not passed and <b>enhance_l7policy_enable</b> is set to <b>false</b>, the priority of the new forwarding policy is 1.</li><li>• If <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, the priority of the new forwarding policy is <b>0</b>.</li><li>• If <b>action</b> is set to other values, the priority of the new forwarding policy will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default.<ul style="list-style-type: none"><li>– If there is no forwarding policy, the priority of a new forwarding policy will be 1 by default.</li><li>– If the priority of an existing forwarding policy is the maximum value (10,000), the forwarding policy will fail to be created because the maximum value will be exceeded. In this case, specify a value or adjust the priorities of existing forwarding policies.</li></ul></li></ul> |
| project_id | No        | String | <b>Definition:</b> Specifies the ID of the project where the forwarding policy is used.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Parameter            | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_listener_id | No        | String | <p><b>Definition:</b> Specifies the ID of the listener to which requests are redirected. This parameter is mandatory when <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The listener's protocol must be <b>HTTPS</b> or <b>TERMINATED_HTTPS</b>.</li><li>• A listener added to another load balancer is not allowed.</li><li>• This parameter cannot be passed in the API for adding or updating a forwarding policy if <b>action</b> is set to <b>REDIRECT_TO_POOL</b>.</li></ul> <p><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p> |
| redirect_pool_id     | No        | String | <p><b>Definition:</b> Specifies the ID of the backend server group to which requests will be forwarded.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter takes effect only when <b>action</b> is set to <b>REDIRECT_TO_POOL</b>.</li><li>• If this parameter is specified when <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, an error will be reported.</li></ul> <p><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p>                                                                                                                                                    |
| redirect_url         | No        | String | <p><b>Definition:</b> Specifies the URL to which requests will be forwarded.</p> <p><b>Constraints:</b> The value must be in the format of <i>protocol://host:port/path?query</i>.</p> <p><b>Range:</b> N/A<br/><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                           |



| Parameter                            | Mandatory | Type                                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------|-----------|-----------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_url_config                  | No        | CreateRedirectUrlConfig object                | <b>Definition:</b> Specifies the URL to which requests are forwarded.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b>. If this parameter is passed and <b>enhance_l7policy_enable</b> is set to <b>false</b>, an error will be returned.</li><li>• This parameter is mandatory when <b>action</b> is set to <b>REDIRECT_TO_URL</b>. It cannot be specified if the value of <b>action</b> is not <b>REDIRECT_TO_URL</b>. Otherwise, an error is reported.</li><li>• For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.</li></ul> |
| redirect_pools_config                | No        | Array of CreateRedirectPoolsConfig objects    | <b>Definition:</b> Specifies the backend server groups that the requests are forwarded to.<br><b>Constraints:</b> A maximum of five backend server groups can be configured for a forwarding policy.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| redirect_pools_sticky_session_config | No        | CreateRedirectPoolsStickySessionConfig object | <b>Definition:</b> Specifies whether to enable sticky session for backend server groups configured for a forwarding policy. The load balancer generates a cookie after it receives a request from a client. All subsequent requests with the same cookie are routed to the same backend server group.<br><b>Constraints:</b> This parameter is unsupported for shared load balancers. If it is passed, an error will be returned.                                                                                                                                                                                                                                                            |

| Parameter                    | Mandatory | Type                                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------|-----------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| fixed_response_config        | No        | CreateFixedResponseConfig object       | <b>Definition:</b> Specifies the configuration of the page that will be returned.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b>. If this parameter is passed and <b>enhance_l7policy_enable</b> is set to <b>false</b>, an error will be returned.</li><li>• This parameter is mandatory when <b>action</b> is set to <b>FIXED_RESPONSE</b>. It cannot be specified if <b>action</b> is set to other values.</li><li>• For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.</li></ul> |
| redirect_pools_extend_config | No        | CreateRedirectPoolsExtendConfig object | <b>Definition:</b> Specifies the backend server group that requests are forwarded to.<br><b>Constraints:</b> This parameter takes effect only when <b>action</b> is set to <b>REDIRECT_TO_POOL</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Parameter | Mandatory | Type                                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|-----------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rules     | No        | Array of <a href="#">CreateL7PolicyRuleOption</a> objects | <b>Definition:</b> Lists the forwarding rules in the forwarding policy.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>Each list can contain a maximum of 10 forwarding rules (if <b>conditions</b> is specified, a condition is considered as a rule). If <b>type</b> is set to <b>HOST_NAME</b>, <b>PATH</b>, <b>METHOD</b>, or <b>SOURCE_IP</b>, only one forwarding rule can be created for each type.</li><li>The entire list will be replaced if you update it.</li><li>The forwarding rule cannot be created when <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>.</li></ul> |

**Table 5-627** CreateRedirectUrlConfig

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                             |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol  | No        | String | <b>Definition:</b> Specifies the protocol for redirection.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li><b>HTTP</b></li><li><b>HTTPS</b></li><li><b>\${protocol}</b>: indicates that the protocol in the request will be used.</li></ul> <b>Default value:</b> <b>\${protocol}</b> |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| host      | No        | String | <b>Definition:</b> Specifies the name of the host that requests are redirected to.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit.<br><b>Default value:</b> <code>\${host}</code> , indicating that the host in the request will be used.                                                                                                                                                                               |
| port      | No        | String | <b>Definition:</b> Specifies the port that requests are redirected to.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> <code>\${port}</code> , indicating that the port in the request will be used.                                                                                                                                                                                                                                                                                                       |
| path      | No        | String | <b>Definition:</b> Specifies the path that requests are redirected to.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain only letters, digits, and special characters: <code>_~';@^-%#&amp;\$. *+?,=!: \/() []{} </code> and must start with a slash (/). <code>\$1</code> , <code>\$2</code> , <code>\$3</code> , and all the way to <code>\$9</code> match the wildcard asterisk (*) in the requested URL.<br><b>Default value:</b> <code>\${path}</code> , indicating that the path in the request will be used. |

| Parameter             | Mandatory | Type                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------|-----------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| query                 | No        | String                           | <p><b>Definition:</b> Specifies the query string set in the URL for redirection. The following is an example:</p> <p>In the URL <b>https://www.example.com:8080/elb?type=loadbalancer</b>, if this parameter is set to <b>\${query}&amp;name=my_name</b>, the URL will be redirected to <b>https://www.example.com:8080/elb?type=loadbalancer&amp;name=my_name</b>. In the example, <b>\${query}</b> indicates <b>type=loadbalancer</b>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> The value can contain only letters, digits, and the special characters: <b>!\$&amp;'()*+,-./:;=?@^_`</b>. The letters are case-sensitive. <b>\$1</b>, <b>\$2</b>, <b>\$3</b>, and all the way to <b>\$9</b> match the wildcard asterisk (<b>*</b>) in the requested URL.</p> <p><b>Default value:</b> <b>\${query}</b>, indicating that the query string in the request will be used.</p> |
| status_code           | Yes       | String                           | <p><b>Definition:</b> Specifies the status code returned after the requests are redirected.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• 301</li><li>• 302</li><li>• 303</li><li>• 307</li><li>• 308</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| insert_headers_config | No        | CreateInsertHeadersConfig object | <p><b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.</p> <p><b>Constraints:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Parameter             | Mandatory | Type                             | Description                                                                                                                               |
|-----------------------|-----------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| remove_headers_config | No        | CreateRemoveHeadersConfig object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule.<br><b>Constraints:</b> N/A |

**Table 5-628** CreateRedirectPoolsConfig

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pool_id   | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                     |
| weight    | No        | String | <b>Definition:</b> Specifies the weight of the backend server group. Requests are routed to backend server groups based on their weights. The larger the weight is, the higher proportion of requests the backend server group receives. If the weight is set to 0, the backend server group will not accept new requests.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 100<br><b>Default value:</b> 1 |

**Table 5-629** CreateRedirectPoolsStickySessionConfig

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                         |
|-----------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | No        | Boolean | <b>Definition:</b> Specifies whether to enable sticky session for backend server groups configured in a forwarding policy.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> <b>false</b> , indicating that sticky session is disabled. |
| timeout   | No        | Integer | <b>Definition:</b> Specifies the stickiness duration, in minutes.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 1440, in minutes<br><b>Default value:</b> 1440                                                                                                                                                                                   |

**Table 5-630** CreateFixedResponseConfig

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                         |
|--------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| status_code  | Yes       | String | <b>Definition:</b> Specifies the HTTP status code.<br><b>Constraints:</b> N/A<br><b>Range:</b> 200-299, 400-499, 500-599<br><b>Default value:</b> N/A                                                                                                                                               |
| content_type | No        | String | <b>Definition:</b> Specifies the format of the returned body.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• text/plain</li><li>• text/css</li><li>• text/html</li><li>• application/javascript</li><li>• application/json</li></ul> <b>Default value:</b> N/A |

| Parameter             | Mandatory | Type                             | Description                                                                                                                                         |
|-----------------------|-----------|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| message_body          | No        | String                           | <b>Definition:</b> Specifies the content of the response message body.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| insert_headers_config | No        | CreateInsertHeadersConfig object | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.<br><b>Constraints:</b> N/A            |
| remove_headers_config | No        | CreateRemoveHeadersConfig object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule.<br><b>Constraints:</b> N/A           |
| traffic_limit_config  | No        | CreateTrafficLimitConfig object  | <b>Definition:</b> Specifies how requests are limited.<br><b>Constraints:</b> N/A                                                                   |

**Table 5-631** CreateRedirectPoolsExtendConfig

| Parameter             | Mandatory | Type                             | Description                                                                                                                                                                                                      |
|-----------------------|-----------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rewrite_url_enable    | No        | Boolean                          | <b>Definition:</b> Specifies whether to set <b>rewrite_url_enable</b> to <b>true</b> .                                                                                                                           |
| rewrite_url_config    | No        | CreateRewriteUrlConfig object    | <b>Definition:</b> Specifies the URL for the backend server group that requests are forwarded to.<br><b>Constraints:</b> This parameter takes effect only when <b>action</b> is set to <b>REDIRECT_TO_POOL</b> . |
| insert_headers_config | No        | CreateInsertHeadersConfig object | <b>Definition:</b> Specifies the request and response headers you want to add.<br><b>Constraints:</b> N/A                                                                                                        |



| Parameter             | Mandatory | Type                                             | Description                                                                                                                               |
|-----------------------|-----------|--------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------|
| remove_headers_config | No        | <a href="#">CreateRemoveHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule.<br><b>Constraints:</b> N/A |
| traffic_limit_config  | No        | <a href="#">CreateTrafficLimitConfig</a> object  | <b>Definition:</b> Specifies how requests are limited.<br><b>Constraints:</b> N/A                                                         |
| cors_config           | No        | <a href="#">CreateCorsConfig</a> object          | <b>Definition:</b> Specifies the CORS configurations.<br><b>Constraints:</b> N/A                                                          |
| traffic_mirror_config | No        | <a href="#">CreateTrafficMirrorConfig</a> object | <b>Definition:</b> Specifies the traffic mirroring configuration.<br><b>Constraints:</b> N/A                                              |

**Table 5-632** CreateRewriteUrlConfig

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                              |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| host      | No        | String | <b>Definition:</b> Specifies the domain name of the host that requests are redirected to.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.<br><b>Default value:</b> <code>\${host}</code> , indicating that the host in the request will be used. |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| path      | No        | String | <p><b>Definition:</b> Specifies the path that requests are redirected to. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL. If the number of regular expression match groups is less than the specified number, <b>\${path}</b> is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, <b>\$abc#123</b>, and the matching result is <b>#123</b>. If the dollar sign (\$) is followed by a special character, for example, <b>\$#</b>, the matching result is <b>\$#</b>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> The value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&amp;\$.+?,=!: /()</p> <p><b>Default value:</b> <b>\${path}</b>, indicating that the path in the request will be used.</p> |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| query     | No        | String | <b>Definition:</b> Specifies the query string set in the URL for redirection. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL. If the number of regular expression match groups is less than the specified number, <b>\${path}</b> is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, <b>\$abc#123</b> , and the matching result is <b>#123</b> . If the dollar sign (\$) is followed by a special character, for example, <b>\$#</b> , the matching result is <b>\$#</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain only letters, digits, and the special characters: !\$&'() +,-./:;=?@^_`. The letters are case-sensitive.<br><b>Default value:</b> <b>\${query}</b> , indicating that the query string in the request will be used. |

**Table 5-633** CreateInsertHeadersConfig

| Parameter | Mandatory | Type                                                      | Description                                                                                               |
|-----------|-----------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| configs   | Yes       | Array of <a href="#">CreateInsertHeaderConfig</a> objects | <b>Definition:</b> Specifies the request and response headers you want to add.<br><b>Constraints:</b> N/A |

**Table 5-634** CreateInsertHeaderConfig

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key        | Yes       | String | <p><b>Definition:</b> Specifies the key of the request and response headers.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The following cannot be used as a key of request headers:</li><li>• The following cannot be used as a key of response headers:</li></ul> <p>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out</p> <p>connection, upgrade, content-length, or transfer-encoding</p> <p><b>Range:</b> The value can contain 1 to 40 characters, including letters (case-insensitive), digits, hyphens (-), and underscores (_).</p> <p><b>Default value:</b> N/A</p> |
| value_type | Yes       | String | <p><b>Definition:</b> Specifies the value type of the request and response headers.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> <b>USER_DEFINED</b>, <b>REFERENCE_HEADER</b>, or <b>SYSTEM_DEFINED</b></p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | Yes       | String | <p><b>Definition:</b> Specifies the value of the request and response headers.</p> <p><b>Constraints:</b> If <b>value_type</b> is set to <b>SYSTEM_DEFINED</b>, the value can only be CLIENT-PORT, CLIENT-IP, ELB-PORT, CLIENT-IP, ELB-PROTOCOL, ELB-ID, ELB-PORT, ELB-EIP, ELB-VIP, TLS-PROTOCOL, TLS-CIPHER, CLIENTCERT-SUBJECTDN, CLIENTCERT-ISSUERDN, CLIENTCERT-FINGERPRINT, CLIENTCERT-CLIENTVERIFY, CLIENTCERT-SERIALNUMBER, CLIENTCERT, CLIENTCERT-CIPHERS, CLIENTCERT-END, TLS-ALPN-PROTOCOL, TLS-SNI, TLS-JA3, and TLS-JA4. TLS-PROTOCOL, TLS-CIPHER, CLIENTCERT-SUBJECTDN, CLIENTCERT-ISSUERDN, CLIENTCERT-FINGERPRINT, CLIENTCERT-CLIENTVERIFY, CLIENTCERT-SERIALNUMBER, CLIENTCERT, CLIENTCERT-CIPHERS, CLIENTCERT-END, TLS-ALPN-PROTOCOL, TLS-SNI, TLS-JA3, and TLS-JA4 can only be specified for HTTPS and QUIC listeners.</p> <p><b>Range:</b> The value can contain 1 to 128 characters. ASCII codes 32 through 127 printable characters, asterisk (*), and question mark (?) are also supported. The value cannot start or end with a space.</p> <p>The following values are not allowed for request headers: connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, transparent, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-</p> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                      |
|-----------|-----------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>protocol, x-forwarded-tls-cipher, x-forwarded-port, x-real-ip, x-forwarded-proto, x-forwarded-elb-ip, x-forwarded-elb-id, x-forwarded-elb-vip, x-nuwa-trace-ne-in, and x-nuwa-trace-ne-out.</p> <p>The following values are not allowed for response headers: connection, upgrade, content-length, or transfer-encoding.</p> <p><b>Default value:</b> N/A</p> |

Table 5-635 CreateRemoveHeadersConfig

| Parameter | Mandatory | Type                                                      | Description                                                                                                             |
|-----------|-----------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| configs   | Yes       | Array of <a href="#">CreateRemoveHeaderConfig</a> objects | <p><b>Definition:</b> Specifies the request and response headers you want to remove.</p> <p><b>Constraints:</b> N/A</p> |

**Table 5-636** CreateRemoveHeaderConfig

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | <b>Definition:</b> Specifies the key of the header you want to remove from the request that matches the forwarding rule.<br><b>Constraints:</b> The following cannot be used as a key.<br>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out<br><b>Range:</b> The value can contain 1 to 40 characters, including letters (case-insensitive), digits, hyphens (-), and underscores (_).<br><b>Default value:</b> N/A |

**Table 5-637** CreateTrafficLimitConfig

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                   |
|-----------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| qps       | No        | Integer | <b>Definition:</b> Specifies the maximum number of queries per second (QPS).<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 100000. Unit: count/s. <b>0</b> indicates that QPS is not limited.<br><b>Default value:</b> N/A |

| Parameter         | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| per_source_ip_qps | No        | Integer | <p><b>Definition:</b> Specifies the maximum number of queries per second (QPS) from a source IP address (single client).</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is not available for QUIC listeners.</li><li>• The value can be <b>0</b> or <b>null</b>.</li><li>• If <b>qps</b> is not set to <b>0</b>, <b>per_source_ip_qps</b> must be specified a smaller value than <b>qps</b>.</li></ul> <p><b>Range:</b> 0 to 100000. Unit: count/s. <b>0</b> indicates that QPS is not limited.</p> <p><b>Default value:</b> N/A</p> |
| burst             | No        | Integer | <p><b>Definition:</b> Specifies the allowed burst queries if the number of queries exceeds the value specified for <b>qps</b>. If the number of burst queries exceeds the value specified for <b>burst</b>, 503 Service Unavailable will be returned to the client.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> 0 to 100000. Unit: count/s.</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                    |



**Table 5-638** CreateCorsConfig

| Parameter      | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| allow_origin   | No        | Array of strings | <b>Definition:</b> Specifies the origins that are allowed to access cross-origin resources through a browser. The origin can be a wildcard (*) or one or more URLs.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>Each URL must start with <b>http://</b> or <b>https://</b>, followed by a valid domain name or level-1 wildcard domain name, for example, <b>http://*.test.abc.example.com</b>.</li><li>It is optional to include a port number (ranging from 1 to 65535) in the URL.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| allow_methods  | No        | Array of strings | <b>Definition:</b> Specifies the HTTP methods that the specified URLs can use to access cross-origin resources.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                    |
| allow_headers  | No        | Array of strings | <b>Definition:</b> Specifies the request headers that can be carried in CORS requests.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                             |
| expose_headers | No        | Array of strings | <b>Definition:</b> Specifies the headers that can be exposed.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Parameter         | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                    |
|-------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| allow_credentials | No        | Boolean | <b>Definition:</b> Specifies whether to allow credentials in CORS requests.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Credentials are allowed.</li><li>• <b>false:</b> Credentials are not allowed.</li></ul> <b>Default value:</b> N/A |
| max_age           | No        | Long    | <b>Definition:</b> Specifies the maximum duration a preflight request can be cached, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> -1 to 172800<br><b>Default value:</b> N/A                                                                                                         |

**Table 5-639** CreateTrafficMirrorConfig

| Parameter                  | Mandatory | Type             | Description                                                                                                                                                                 |
|----------------------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| target_ids                 | No        | Array of strings | <b>Definition:</b> Specifies the IDs of the backend server groups that traffic is mirrored to.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| mirror_request_body_enable | No        | Boolean          | Specifies whether to include the mirror request body. The default value is <b>true</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A       |

**Table 5-640** CreateL7PolicyRuleOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | <b>Definition:</b> Specifies the administrative status of the forwarding rule.<br><b>Constraints:</b> The value can only be <b>true</b> .<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| type           | Yes       | String  | <b>Definition:</b> Specifies the forwarding rule type.<br><b>Constraints:</b><br>If <b>type</b> is set to <b>HOST_NAME</b> , <b>PATH</b> , <b>METHOD</b> , or <b>SOURCE_IP</b> , only one forwarding rule can be created for each type. If <b>type</b> is set to <b>HEADER</b> and <b>QUERY_STRING</b> , multiple forwarding rules can be created for each type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>HOST_NAME:</b> A domain name will be used for matching.</li><li>• <b>PATH:</b> A URL will be used for matching.</li><li>• <b>METHOD:</b> A request method will be used for matching.</li><li>• <b>HEADER:</b> A request header will be used for matching.</li><li>• <b>QUERY_STRING:</b> A query string will be used for matching.</li><li>• <b>SOURCE_IP:</b> A source IP address will be used for matching.</li><li>• <b>COOKIE:</b> A cookie will be used for matching.</li></ul> <b>Default value:</b> N/A |

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|--------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| compare_type | Yes       | String  | <p><b>Definition:</b> Specifies how requests are matched with the forwarding rule.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, the value can only be <b>EQUAL_TO</b>, and asterisks (*) can be used as wildcard characters.</li><li>• If <b>type</b> is set to <b>PATH</b>, the value can be <b>REGEX</b>, <b>STARTS_WITH</b>, or <b>EQUAL_TO</b>.</li><li>• If <b>type</b> is set to <b>METHOD</b> or <b>SOURCE_IP</b>, the value can only be <b>EQUAL_TO</b>.</li><li>• If <b>type</b> is set to <b>HEADER</b> or <b>QUERY_STRING</b>, the value can only be <b>EQUAL_TO</b>, asterisks (*) and question marks (?) can be used as wildcard characters.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: exact match</li><li>• <b>REGEX</b>: regular expression match</li><li>• <b>STARTS_WITH</b>: prefix match</li></ul> <p><b>Default value:</b> N/A</p> |
| invert       | No        | Boolean | <p><b>Definition:</b> Specifies whether reverse matching is supported.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> true or false</p> <p><b>Default value:</b> false</p> <p>This parameter is unsupported. Please do not use it.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                   |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | No        | String | <p><b>Definition:</b> Specifies the key of the match item. For example, if an HTTP header is used for matching, <b>key</b> is the name of the HTTP header parameter.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> <p>This parameter is unsupported. Please do not use it.</p> |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | Yes       | String | <p><b>Definition:</b> Specifies the value of the match item. For example, if a domain name is used for matching, <b>value</b> is the domain name.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter takes effect only when <b>conditions</b> is left blank.</li><li>• If <b>type</b> is set to <b>HOST_NAME</b>, the value can contain letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b> and <b>compare_type</b> to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters: <code>_~';@^-%#&amp;\$. * + ?, = ! :   \ / ( ) [ ] { }</code></li><li>• If <b>type</b> is set to <b>METHOD</b>, <b>SOURCE_IP</b>, <b>HEADER</b>, or <b>QUERY_STRING</b>, this parameter will not take effect, and <b>conditions</b> will be used to specify the key and value.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

| Parameter  | Mandatory | Type                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|------------|-----------|------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| conditions | No        | Array of <a href="#">CreateRuleCondition</a> objects | <b>Definition:</b> Specifies the conditions contained in a forwarding rule.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b>.</li><li>• If <b>conditions</b> is set for a forwarding rule, the values of <b>key</b> and <b>value</b> are ignored.</li><li>• All keys in the conditions of a rule must be the same, and the values must be unique.</li></ul> |

**Table 5-641** CreateRuleCondition

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | No        | String | <p><b>Definition:</b> Specifies the key of match item.</p> <p><b>Constraints:</b> All keys in the conditions list in the same rule must be the same.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>PATH</b>, <b>METHOD</b>, or <b>SOURCE_IP</b>, this parameter is an empty string.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the request and response header, and <b>value</b> indicates the value of the request and response header. Each key can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_).</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The key is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({ }), angle brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed.</li></ul> <p><b>Default value:</b> N/A</p> |



| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | Yes       | String | <p><b>Definition:</b> Specifies the value of the match item.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The key of each condition in a forwarding rule must be the same.</li><li>• The value of each condition in a forwarding rule must be unique.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>key</b> is always an empty string and <b>value</b> indicates the domain name. Each value can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b>, <b>key</b> is always an empty string and <b>value</b> indicates the request path, which can contain 1 to 128 characters. If <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b> for a forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&amp;\$. * +?,=!: \\V()[]{}.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the HTTP header parameter, and <b>value</b> indicates the value of the request header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are</li></ul> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------|-----------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match one character.</p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({ }), angle brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match one character.</li><li>• If <b>type</b> is set to <b>METHOD</b>, <b>key</b> is always an empty string and <b>value</b> indicates the HTTP method. The value can be <b>GET</b>, <b>PUT</b>, <b>POST</b>, <b>DELETE</b>, <b>PATCH</b>, <b>HEAD</b>, or <b>OPTIONS</b>.</li><li>• If <b>type</b> is set to <b>SOURCE_IP</b>, <b>key</b> is always an empty string and <b>value</b> indicates the source IP address of the request. The value is an IPv4 or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.</li></ul> <p><b>Default value:</b> N/A</p> |

## Response Parameters

Status code: 201

**Table 5-642** Response body parameters

| Parameter  | Type                   | Description                                                                                                                                                                                                                                  |
|------------|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                 | <b>Definition:</b> Specifies the request ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-).<br><b>Default value:</b> N/A |
| l7policy   | <b>L7Policy</b> object | <b>Definition:</b> Specifies the forwarding policy.<br><b>Constraints:</b> N/A                                                                                                                                                               |

**Table 5-643** L7Policy

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| action         | String  | <b>Definition:</b> Specifies the action of the forwarding policy.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL:</b> Requests are forwarded to another backend server group.</li><li>• <b>REDIRECT_TO_LISTENER:</b> Requests are redirected to an HTTPS listener.</li><li>• <b>REDIRECT_TO_URL:</b> Requests are redirected to another URL.</li><li>• <b>FIXED_RESPONSE:</b> A fixed response body is returned.</li></ul> |
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the forwarding policy.<br><b>Range:</b> The value can only be <b>true</b> .                                                                                                                                                                                                                                                                                                                    |
| description    | String  | <b>Definition:</b> Provides supplementary information about the forwarding policy.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                  |
| id             | String  | <b>Definition:</b> Specifies the forwarding policy ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                              |

| Parameter            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                |
|----------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listener_id          | String  | <b>Definition:</b> Specifies the ID of the listener with which the forwarding policy is associated.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                   |
| name                 | String  | <b>Definition:</b> Specifies the forwarding policy name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                              |
| position             | Integer | <b>Definition:</b> Specifies the priority of the forwarding policy. The priority cannot be updated.<br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                |
| priority             | Integer | <b>Definition:</b> Specifies the priority of the forwarding policy. A smaller value indicates a higher priority.<br><b>Range:</b> <ul style="list-style-type: none"><li>• If <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, the priority ranges from 0 to 10,000.</li><li>• If <b>action</b> is set to other values, the priority ranges from 1 to 10,000.</li></ul> |
| project_id           | String  | <b>Definition:</b> Specifies the ID of the project where the forwarding policy is used.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                               |
| provisioning_status  | String  | <b>Definition:</b> Specifies the provisioning status of the forwarding policy.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ACTIVE</b> (default): The forwarding policy is provisioned successfully.</li><li>• <b>ERROR</b>: The forwarding policy has the same rule as another forwarding policy added to the same listener.</li></ul>                     |
| redirect_pool_id     | String  | <b>Definition:</b> Specifies the ID of the backend server group to which requests will be forwarded.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                  |
| redirect_listener_id | String  | <b>Definition:</b> Specifies the ID of the listener to which requests are redirected.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                 |

| Parameter                            | Type                                                    | Description                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_url                         | String                                                  | <b>Definition:</b> Specifies the URL to which requests will be forwarded.<br><b>Range:</b> The value must be in the format of <i>protocol://host:port/path?query</i> .<br>This parameter is unsupported. Please do not use it.                                                                                                      |
| rules                                | Array of <a href="#">RuleRef</a> objects                | <b>Definition:</b> Lists the forwarding rules in the forwarding policy.                                                                                                                                                                                                                                                             |
| redirect_url_config                  | <a href="#">RedirectUrlConfig</a> object                | <b>Definition:</b> Specifies the URL to which requests are forwarded.                                                                                                                                                                                                                                                               |
| redirect_pools_config                | Array of <a href="#">RedirectPoolsConfig</a> objects    | <b>Definition:</b> Specifies the backend server groups that the requests are forwarded to. This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b> . If this parameter is specified and <b>enhance_l7policy_enable</b> is set to <b>false</b> , an error will be returned.                       |
| redirect_pools_sticky_session_config | <a href="#">RedirectPoolsStickySessionConfig</a> object | <b>Definition:</b> Specifies whether to enable sticky session for backend server groups configured for a forwarding policy. The load balancer generates a cookie after it receives a request from a client. All subsequent requests with the same cookie are routed to the same backend server group.                               |
| redirect_pools_extend_config         | <a href="#">RedirectPoolsExtendConfig</a> object        | <b>Definition:</b> Specifies the backend server group that requests are forwarded to.                                                                                                                                                                                                                                               |
| fixed_response_config                | <a href="#">FixedResponseConfig</a> object              | <b>Definition:</b> Specifies the configuration of the page that will be returned.                                                                                                                                                                                                                                                   |
| created_at                           | String                                                  | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                                                                           |
|-----------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at            | String | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br><br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| enterprise_project_id | String | <b>Definition:</b> Specifies the enterprise project ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                          |

**Table 5-644** RuleRef

| Parameter | Type   | Description                                                               |
|-----------|--------|---------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the forwarding rule ID.<br><b>Range:</b> N/A |

**Table 5-645** RedirectUrlConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                |
|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol  | String | <b>Definition:</b> Specifies the protocol for redirection.<br><b>Range:</b> <ul style="list-style-type: none"><li>• HTTP</li><li>• HTTPS</li><li>• <b>\${protocol}</b>: indicates that the protocol in the request will be used.</li></ul> |
| host      | String | <b>Definition:</b> Specifies the name of the host that requests are redirected to.<br><b>Range:</b> The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit.                        |
| port      | String | <b>Definition:</b> Specifies the port that requests are redirected to.<br><b>Range:</b> N/A                                                                                                                                                |

| Parameter             | Type                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| path                  | String                                     | <b>Definition:</b> Specifies the path that requests are redirected to.<br><b>Range:</b> The value can contain only letters, digits, and special characters: <code>_~';@^-%#&amp;\$.*+?;=!: \\V()[]{} </code> and must start with a slash (/).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| query                 | String                                     | <b>Definition:</b> Specifies the query string set in the URL for redirection. The following is an example:<br>In the URL <b>https://www.example.com:8080/elb?type=loadbalancer</b> , if this parameter is set to <b>`\${query}&amp;name=my_name`</b> , the URL will be redirected to <b>https://www.example.com:8080/elb?type=loadbalancer&amp;name=my_name</b> . In the example, <b>`\${query}`</b> indicates <b>type=loadbalancer</b> .<br><b>Range:</b> The value can contain only letters, digits, and the special characters: <code>!\$&amp;'()*+,-./:;=?@^_` </code> . The letters are case-sensitive. <code>\$1</code> , <code>\$2</code> , <code>\$3</code> , and all the way to <code>\$9</code> match the wildcard asterisk (*) in the requested URL. |
| status_code           | String                                     | <b>Definition:</b> Specifies the status code returned after the requests are redirected.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 301</li><li>• 302</li><li>• 303</li><li>• 307</li><li>• 308</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| insert_headers_config | <a href="#">InsertHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| remove_headers_config | <a href="#">RemoveHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

**Table 5-646** RedirectPoolsConfig

| Parameter | Type    | Description                                                                                                                                                                                                                                                                                                                                          |
|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pool_id   | String  | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                       |
| weight    | Integer | <b>Definition:</b> Specifies the weight of the backend server group. Requests are routed to backend server groups based on their weights. The larger the weight is, the higher proportion of requests the backend server group receives. If the weight is set to 0, the backend server group will not accept new requests.<br><b>Range:</b> 0 to 100 |

**Table 5-647** RedirectPoolsStickySessionConfig

| Parameter | Type    | Description                                                                                                                                                                                                    |
|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable sticky session for backend server groups configured in a forwarding policy.<br><b>Default value:</b> <b>false</b> , indicating that sticky session is disabled. |
| timeout   | Integer | <b>Definition:</b> Specifies the stickiness duration, in minutes.<br><b>Range:</b> 1 to 1440                                                                                                                   |

**Table 5-648** RedirectPoolsExtendConfig

| Parameter          | Type                                    | Description                                                                                                                                                                                      |
|--------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rewrite_url_enable | Boolean                                 | <b>Definition:</b> Specifies whether to set <b>rewrite_url_enable</b> to <b>true</b> .<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option). |
| rewrite_url_config | <a href="#">RewriteUrlConfig</a> object | <b>Definition:</b> Specifies the URL for the backend server group that requests are forwarded to.                                                                                                |



| Parameter             | Type                                       | Description                                                                                                    |
|-----------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| insert_headers_config | <a href="#">InsertHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.  |
| remove_headers_config | <a href="#">RemoveHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule. |
| traffic_limit_config  | <a href="#">TrafficLimitConfig</a> object  | <b>Definition:</b> Specifies how requests are limited.                                                         |
| cors_config           | <a href="#">CorsConfig</a> object          | <b>Definition:</b> Specifies the CORS configurations.                                                          |
| traffic_mirror_config | <a href="#">TrafficMirrorConfig</a> object | <b>Definition:</b> Specifies the traffic mirroring configuration.                                              |

**Table 5-649** RewriteUrlConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| host      | String | <b>Definition:</b> Specifies the domain name of the host that requests are redirected to.<br><br><b>Range:</b> The value can contain letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| path      | String | <b>Definition:</b> Specifies the path that requests are redirected to. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL. If the number of regular expression match groups is less than the specified number, <b>\${path}</b> is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, <b>\$abc#123</b> , and the matching result is <b>#123</b> . If the dollar sign (\$) is followed by a special character, for example, <b>\$#</b> , the matching result is <b>\$#</b> .<br><br><b>Range:</b> The value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&\$.+?,=!: /() |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| query     | String | <b>Definition:</b> Specifies the query string set in the URL for redirection. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL. If the number of regular expression match groups is less than the specified number, <b>\${path}</b> is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, <b>\$abc#123</b> , and the matching result is <b>#123</b> . If the dollar sign (\$) is followed by a special character, for example, <b>\$#</b> , the matching result is <b>\$#</b> .<br><b>Range:</b> The value can contain only letters, digits, and the special characters: !\$&'()+,-./:;=?@^_`. The letters are case-sensitive. |

**Table 5-650** CorsConfig

| Parameter     | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| allow_origin  | Array of strings | <b>Definition:</b> Specifies the origins that are allowed to access cross-origin resources through a browser. The origin can be a wildcard (*) or one or more URLs.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>Each URL must start with <b>http://</b> or <b>https://</b>, followed by a valid domain name or level-1 wildcard domain name, for example, <b>http://*.test.abc.example.com</b>.</li><li>It is optional to include a port number (ranging from 1 to 65535) in the URL.</li></ul> |
| allow_methods | Array of strings | <b>Definition:</b> Specifies the HTTP methods that the specified URLs can use to access cross-origin resources.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                             |
| allow_headers | Array of strings | <b>Definition:</b> Specifies the request headers that can be carried in CORS requests.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                      |

| Parameter         | Type             | Description                                                                                                                                                                                                                               |
|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| expose_headers    | Array of strings | <b>Definition:</b> Specifies the headers that can be exposed.<br><b>Range:</b> N/A                                                                                                                                                        |
| allow_credentials | Boolean          | <b>Definition:</b> Specifies whether to allow credentials in CORS requests.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Credentials are allowed.</li><li>• <b>false:</b> Credentials are not allowed.</li></ul> |
| max_age           | Long             | <b>Definition:</b> Specifies the maximum duration a preflight request can be cached, in seconds.<br><b>Range:</b> -1 to 172800                                                                                                            |

**Table 5-651** TrafficMirrorConfig

| Parameter                  | Type             | Description                                                                                                         |
|----------------------------|------------------|---------------------------------------------------------------------------------------------------------------------|
| target_ids                 | Array of strings | <b>Definition:</b> Specifies the IDs of the backend server groups that traffic is mirrored to.<br><b>Range:</b> N/A |
| mirror_request_body_enable | Boolean          | Specifies whether to include the mirror request body. The default value is <b>true</b> .<br><b>Range:</b> N/A       |

**Table 5-652** FixedResponseConfig

| Parameter    | Type   | Description                                                                                                                                                                                                                                    |
|--------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| status_code  | String | <b>Definition:</b> Specifies the HTTP status code.<br><b>Range:</b> 200-299, 400-499, 500-599                                                                                                                                                  |
| content_type | String | <b>Definition:</b> Specifies the format of the returned body.<br><b>Range:</b> <ul style="list-style-type: none"><li>• text/plain</li><li>• text/css</li><li>• text/html</li><li>• application/javascript</li><li>• application/json</li></ul> |

| Parameter             | Type                                       | Description                                                                                                    |
|-----------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| message_body          | String                                     | <b>Definition:</b> Specifies the content of the response message body.<br><b>Range:</b> N/A                    |
| insert_headers_config | <a href="#">InsertHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.  |
| remove_headers_config | <a href="#">RemoveHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule. |
| traffic_limit_config  | <a href="#">TrafficLimitConfig</a> object  | <b>Definition:</b> Specifies how requests are limited.                                                         |

**Table 5-653** InsertHeadersConfig

| Parameter | Type                                                | Description                                                                                               |
|-----------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| configs   | Array of <a href="#">InsertHeaderConfig</a> objects | <b>Definition:</b> Specifies the request and response headers you want to add.<br><b>Constraints:</b> N/A |

**Table 5-654** InsertHeaderConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <b>Definition:</b> Specifies the key of the request and response headers.<br><b>Constraints:</b> The following cannot be used as a key.<br>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out<br><b>Range:</b> The value can contain 1 to 40 characters, including letters (case-insensitive), digits, hyphens (-), and underscores (_). |

| Parameter  | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value_type | String | <b>Definition:</b> Specifies the value type of the request and response headers.<br><b>Range:</b> <b>USER_DEFINED</b> , <b>REFERENCE_HEADER</b> , or <b>SYSTEM_DEFINED</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| value      | String | <b>Definition:</b> Specifies the value of the request and response headers.<br><b>Range:</b> The value can contain 1 to 128 characters. ASCII codes 32 through 127 printable characters, asterisks (*), and question marks (?) are also supported. The value cannot start or end with a space and cannot be any of the following: connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, transparent, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-port, x-real-ip, x-forwarded-proto, x-forwarded-elb-ip, x-forwarded-elb-id, x-forwarded-elb-vip, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out. |

**Table 5-655** RemoveHeadersConfig

| Parameter | Type                                                | Description                                                                                                  |
|-----------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| configs   | Array of <a href="#">RemoveHeaderConfig</a> objects | <b>Definition:</b> Specifies the request and response headers you want to remove.<br><b>Constraints:</b> N/A |

**Table 5-656** RemoveHeaderConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <p><b>Definition:</b> Specifies the key of the request and response headers you want to remove.</p> <p><b>Constraints:</b> The following cannot be used as a key.</p> <p>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out</p> <p><b>Range:</b> The value can contain 1 to 40 characters, including letters (case-insensitive), digits, hyphens (-), and underscores (_).</p> |

**Table 5-657** TrafficLimitConfig

| Parameter         | Type    | Description                                                                                                                                                                                                                                                                                                              |
|-------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| qps               | Integer | <p><b>Definition:</b> Specifies the maximum number of queries per second (QPS).</p> <p><b>Range:</b> 0 to 100000. Unit: count/s. <b>0</b> indicates that QPS is not limited.</p>                                                                                                                                         |
| per_source_ip_qps | Integer | <p><b>Definition:</b> Specifies the maximum number of queries per second (QPS) from a source IP address (single client).</p> <p><b>Range:</b> 0 to 100000. Unit: count/s. <b>0</b> indicates that QPS is not limited.</p>                                                                                                |
| burst             | Integer | <p><b>Definition:</b> Specifies the allowed burst queries if the number of queries exceeds the value specified for <b>qps</b>. If the number of burst queries exceeds the value specified for <b>burst</b>, 503 Service Unavailable will be returned to the client.</p> <p><b>Range:</b> 0 to 100000. Unit: count/s.</p> |

## Example Requests

Creating a redirection for a listener

```
POST https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/l7policies

{
 "l7policy" : {
 "action" : "REDIRECT_TO_LISTENER",
 "listener_id" : "e2220d2a-3faf-44f3-8cd6-0c42952bd0ab",
 "redirect_listener_id" : "48a97732-449e-4aab-b561-828d29e45050"
 }
}
```

## Example Responses

**Status code: 201**

Successful request.

```
{
 "l7policy" : {
 "name" : "my policy",
 "redirect_pool_id" : null,
 "description" : "",
 "admin_state_up" : true,
 "rules" : [{
 "id" : "a8310d08-6d4c-413a-aa45-7e43f8183193"
 }],
 "project_id" : "0c1503d710984bad92306faea3654dfd",
 "listener_id" : "8b9d7d2c-49dc-43ba-99f5-3bc476bdf10b",
 "redirect_url" : null,
 "redirect_url_config" : null,
 "redirect_pools_config" : [{
 "weight" : 100,
 "pool_id" : "599fdd99-d908-4dff-9db3-15eec274dfed"
 }],
 "redirect_pools_sticky_session_config" : {
 "enable" : false,
 "timeout" : 1000
 },
 "fixed_response_config" : null,
 "redirect_listener_id" : null,
 "action" : "REDIRECT_TO_POOL",
 "position" : 100,
 "priority" : 1,
 "provisioning_status" : "ACTIVE",
 "id" : "10ebd807-54b1-4f73-a21e-4e7af939d13b",
 "enterprise_project_id" : "0",
 "created_at" : "2025-04-15T08:36:43Z",
 "updated_at" : "2025-04-15T11:49:56Z",
 "redirect_pools_extend_config" : {
 "rewrite_url_enable" : false,
 "rewrite_url_config" : null,
 "insert_headers_config" : {
 "configs" : [{
 "key" : "test",
 "value" : "xxx",
 "value_type" : "USER_DEFINED"
 }]
 },
 "remove_headers_config" : {
 "configs" : [{
 "key" : "req-trace-id"
 }]
 },
 "traffic_limit_config" : null,
 "cors_config" : null,
 }
 }
}
```

```
 "traffic_mirror_config" : null
 },
 "request_id" : "54961722be349499068aa73a5f91745a"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

#### Creating a redirection for a listener

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CreateL7PolicySolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 CreateL7PolicyRequest request = new CreateL7PolicyRequest();
 CreateL7PolicyRequestBody body = new CreateL7PolicyRequestBody();
 CreateL7PolicyOption l7policybody = new CreateL7PolicyOption();
 l7policybody.withAction("REDIRECT_TO_LISTENER")
 .withListenerId("e2220d2a-3faf-44f3-8cd6-0c42952bd0ab")
 .withRedirectListenerId("48a97732-449e-4aab-b561-828d29e45050");
 body.withL7policy(l7policybody);
 request.withBody(body);
 try {
 CreateL7PolicyResponse response = client.createL7Policy(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 }
 }
}
```



```
 System.out.println(e.getErrorMsg());
 }
}
}
```

## Python

### Creating a redirection for a listener

# coding: utf-8

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *
```

if \_\_name\_\_ == "\_\_main\_\_":

# The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.

# In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD\_SDK\_AK and CLOUD\_SDK\_SK in the local environment

ak = os.environ["CLOUD\_SDK\_AK"]

sk = os.environ["CLOUD\_SDK\_SK"]

projectId = "{project\_id}"

credentials = BasicCredentials(ak, sk, projectId)

```
 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()
```

try:

request = CreateL7PolicyRequest()

l7policybody = CreateL7PolicyOption(

action="REDIRECT\_TO\_LISTENER",

listener\_id="e2220d2a-3faf-44f3-8cd6-0c42952bd0ab",

redirect\_listener\_id="48a97732-449e-4aab-b561-828d29e45050"

)

request.body = CreateL7PolicyRequestBody(

l7policy=l7policybody

)

response = client.create\_l7\_policy(request)

print(response)

except exceptions.ClientRequestException as e:

print(e.status\_code)

print(e.request\_id)

print(e.error\_code)

print(e.error\_msg)

## Go

### Creating a redirection for a listener

package main

import (

"fmt"

"github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"

elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"

"github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"

region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"

)

func main() {

// The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security

```
risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.CreateL7PolicyRequest{}
redirectListenerIdL7policy:= "48a97732-449e-4aab-b561-828d29e45050"
l7policybody := &model.CreateL7PolicyOption{
 Action: "REDIRECT_TO_LISTENER",
 ListenerId: "e2220d2a-3faf-44f3-8cd6-0c42952bd0ab",
 RedirectListenerId: &redirectListenerIdL7policy,
}
request.Body = &model.CreateL7PolicyRequestBody{
 L7policy: l7policybody,
}
response, err := client.CreateL7Policy(request)
if err == nil {
 fmt.Printf("%v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 201         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.14.2 Querying Forwarding Policies

### Function

This API is used to query all forwarding policies.

## Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query.
- Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

## Calling Method

For details, see [Calling APIs](#).

## URI

GET /v3/{project\_id}/elb/l7policies

**Table 5-658** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

**Table 5-659** Query Parameters

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker       | No        | String  | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                               |
| limit        | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000                                                                                                                                                                                                                                                                                                                                                                                                                                |
| page_reverse | No        | Boolean | <b>Definition:</b> Specifies whether to use reverse query.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Query resources on the previous page.</li><li>• <b>false:</b> Query resources on the next page.</li></ul> <b>Default value:</b> false |

| Parameter             | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | Array of strings | <p><b>Definition:</b> Specifies the ID of the enterprise project.</p> <p>Multiple values can be used for query in the format of: <i>enterprise_project_id=xxx&amp;enterprise_project_id=xxx</i>.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enterprise_project_id</b> is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:l7policies:list</b> permission must be assigned to the user group.</li><li>• If <b>enterprise_project_id</b> is specified, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:l7policies:list</b> permission are queried.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |
| id                    | No        | Array of strings | <p><b>Definition:</b> Specifies the forwarding policy ID.</p> <p>Multiple IDs can be used for query in the format of <i>id=xxx&amp;id=xxx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Parameter      | Mandatory | Type             | Description                                                                                                                                                                                                                                                                          |
|----------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name           | No        | Array of strings | <b>Definition:</b> Specifies the forwarding policy name.<br>Multiple names can be used for query in the format of <i>name=xxx&amp;name=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                        |
| description    | No        | Array of strings | <b>Definition:</b> Provides supplementary information about the forwarding policy.<br>Multiple descriptions can be used for query in the format of <i>description=xxx&amp;description=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A         |
| admin_state_up | No        | Boolean          | <b>Definition:</b> Specifies the administrative status of the forwarding policy.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                        |
| listener_id    | No        | Array of strings | <b>Definition:</b> Specifies the ID of the listener with which the forwarding policy is associated.<br>Multiple IDs can be used for query in the format of <i>listener_id=xxx&amp;listener_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter    | Mandatory | Type              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------|-----------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| position     | No        | Array of integers | <b>Definition:</b> Specifies the priority of the forwarding policy.<br>Multiple priorities can be used for query in the format of <i>position=xxx&amp;position=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                       |
| action       | No        | Array of strings  | <b>Definition:</b> Specifies the action of the forwarding policy.<br>Multiple actions can be used for query in the format of <i>action=xxx&amp;action=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>● <b>REDIRECT_TO_POOL:</b> Requests are forwarded to another backend server group.</li><li>● <b>REDIRECT_TO_LISTENER:</b> Requests are redirected to an HTTPS listener.</li><li>● <b>REDIRECT_TO_URL:</b> Requests are redirected to another URL.</li><li>● <b>FIXED_RESPONSE:</b> A fixed response body is returned.</li></ul> <b>Default value:</b> N/A |
| redirect_url | No        | Array of strings  | <b>Definition:</b> Specifies the URL to which requests will be forwarded.<br>Multiple URLs can be used for query in the format of <i>redirect_url=xxx&amp;redirect_url=xx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                                                                                        |

| Parameter            | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------|-----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_pool_id     | No        | Array of strings | <b>Definition:</b> Specifies the ID of the backend server group to which requests will be forwarded.<br><br>Multiple IDs can be used for query in the format of <i>redirect_pool_id=xxx&amp;redirect_pool_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                         |
| redirect_listener_id | No        | Array of strings | <b>Definition:</b> Specifies the ID of the listener to which requests are redirected.<br><br>Multiple IDs can be used for query in the format of <i>redirect_listener_id=xxx&amp;redirect_listener_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                |
| provisioning_status  | No        | Array of strings | <b>Definition:</b> Specifies the provisioning status of the forwarding policy.<br><br>Multiple provisioning statuses can be used for query in the format of <i>provisioning_status=xxx&amp;provisioning_status=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>● <b>ACTIVE:</b> The forwarding policy is provisioned successfully.</li><li>● <b>ERROR:</b> The forwarding policy has the same rule as another forwarding policy added to the same listener.</li></ul> <b>Default value:</b> N/A |



| Parameter         | Mandatory | Type              | Description                                                                                                                                                                                                                                                                                                                                                  |
|-------------------|-----------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| display_all_rules | No        | Boolean           | <b>Definition:</b> Specifies whether to display details about the forwarding rules in the forwarding policy.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Details about the forwarding rules are displayed.</li><li>• <b>false:</b> Only the rule IDs are displayed.</li></ul> <b>Default value:</b> N/A |
| priority          | No        | Array of integers | <b>Definition:</b> Specifies the priority of the forwarding policy. A smaller value indicates a higher priority.<br>Multiple priorities can be used for query in the format of <i>priority=xxx&amp;priority=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                           |

## Request Parameters

**Table 5-660** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-661** Response body parameters

| Parameter  | Type                                      | Description                                                                                                                                                                          |
|------------|-------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                                    | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| page_info  | <a href="#">PageInfo</a> object           | <b>Definition:</b> Specifies the pagination information.                                                                                                                             |
| l7policies | Array of <a href="#">L7Policy</a> objects | <b>Definition:</b> Lists the forwarding policies.                                                                                                                                    |

**Table 5-662** PageInfo

| Parameter       | Type    | Description                                                                                                                                                                                                                          |
|-----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String  | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |
| next_marker     | String  | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A                                                                  |
| current_count   | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A                                                                                                                                |

**Table 5-663** L7Policy

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| action         | String  | <b>Definition:</b> Specifies the action of the forwarding policy.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL:</b> Requests are forwarded to another backend server group.</li><li>• <b>REDIRECT_TO_LISTENER:</b> Requests are redirected to an HTTPS listener.</li><li>• <b>REDIRECT_TO_URL:</b> Requests are redirected to another URL.</li><li>• <b>FIXED_RESPONSE:</b> A fixed response body is returned.</li></ul> |
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the forwarding policy.<br><b>Range:</b> The value can only be <b>true</b> .                                                                                                                                                                                                                                                                                                                    |
| description    | String  | <b>Definition:</b> Provides supplementary information about the forwarding policy.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                  |
| id             | String  | <b>Definition:</b> Specifies the forwarding policy ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                              |
| listener_id    | String  | <b>Definition:</b> Specifies the ID of the listener with which the forwarding policy is associated.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                 |
| name           | String  | <b>Definition:</b> Specifies the forwarding policy name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                            |
| position       | Integer | <b>Definition:</b> Specifies the priority of the forwarding policy. The priority cannot be updated.<br><br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                                                                                          |

| Parameter            | Type                                     | Description                                                                                                                                                                                                                                                                                                                                                            |
|----------------------|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| priority             | Integer                                  | <b>Definition:</b> Specifies the priority of the forwarding policy. A smaller value indicates a higher priority.<br><b>Range:</b> <ul style="list-style-type: none"><li>If <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, the priority ranges from 0 to 10,000.</li><li>If <b>action</b> is set to other values, the priority ranges from 1 to 10,000.</li></ul> |
| project_id           | String                                   | <b>Definition:</b> Specifies the ID of the project where the forwarding policy is used.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                           |
| provisioning_status  | String                                   | <b>Definition:</b> Specifies the provisioning status of the forwarding policy.<br><b>Range:</b> <ul style="list-style-type: none"><li><b>ACTIVE</b> (default): The forwarding policy is provisioned successfully.</li><li><b>ERROR</b>: The forwarding policy has the same rule as another forwarding policy added to the same listener.</li></ul>                     |
| redirect_pool_id     | String                                   | <b>Definition:</b> Specifies the ID of the backend server group to which requests will be forwarded.<br><b>Range:</b> N/A                                                                                                                                                                                                                                              |
| redirect_listener_id | String                                   | <b>Definition:</b> Specifies the ID of the listener to which requests are redirected.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                             |
| redirect_url         | String                                   | <b>Definition:</b> Specifies the URL to which requests will be forwarded.<br><b>Range:</b> The value must be in the format of <i>protocol://host:port/path?query</i> .<br>This parameter is unsupported. Please do not use it.                                                                                                                                         |
| rules                | Array of <a href="#">RuleRef</a> objects | <b>Definition:</b> Lists the forwarding rules in the forwarding policy.                                                                                                                                                                                                                                                                                                |
| redirect_url_config  | <a href="#">RedirectUrlConfig</a> object | <b>Definition:</b> Specifies the URL to which requests are forwarded.                                                                                                                                                                                                                                                                                                  |

| Parameter                            | Type                                                    | Description                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_pools_config                | Array of <a href="#">RedirectPoolsConfig</a> objects    | <b>Definition:</b> Specifies the backend server groups that the requests are forwarded to. This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b> . If this parameter is specified and <b>enhance_l7policy_enable</b> is set to <b>false</b> , an error will be returned.                           |
| redirect_pools_sticky_session_config | <a href="#">RedirectPoolsStickySessionConfig</a> object | <b>Definition:</b> Specifies whether to enable sticky session for backend server groups configured for a forwarding policy. The load balancer generates a cookie after it receives a request from a client. All subsequent requests with the same cookie are routed to the same backend server group.                                   |
| redirect_pools_extend_config         | <a href="#">RedirectPoolsExtendConfig</a> object        | <b>Definition:</b> Specifies the backend server group that requests are forwarded to.                                                                                                                                                                                                                                                   |
| fixed_response_config                | <a href="#">FixedResponseConfig</a> object              | <b>Definition:</b> Specifies the configuration of the page that will be returned.                                                                                                                                                                                                                                                       |
| created_at                           | String                                                  | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br><br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| updated_at                           | String                                                  | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br><br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.   |
| enterprise_project_id                | String                                                  | <b>Definition:</b> Specifies the enterprise project ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                            |

**Table 5-664** RuleRef

| Parameter | Type   | Description                                                               |
|-----------|--------|---------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the forwarding rule ID.<br><b>Range:</b> N/A |

**Table 5-665** RedirectUrlConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                     |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol  | String | <b>Definition:</b> Specifies the protocol for redirection.<br><b>Range:</b> <ul style="list-style-type: none"><li>• HTTP</li><li>• HTTPS</li><li>• <b>\${protocol}</b>: indicates that the protocol in the request will be used.</li></ul>      |
| host      | String | <b>Definition:</b> Specifies the name of the host that requests are redirected to.<br><b>Range:</b> The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit.                             |
| port      | String | <b>Definition:</b> Specifies the port that requests are redirected to.<br><b>Range:</b> N/A                                                                                                                                                     |
| path      | String | <b>Definition:</b> Specifies the path that requests are redirected to.<br><b>Range:</b> The value can contain only letters, digits, and special characters: <code>_~!';@^-%#&amp;\$. *+?,=!: \/() [] {}</code> and must start with a slash (/). |

| Parameter             | Type                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| query                 | String                                     | <b>Definition:</b> Specifies the query string set in the URL for redirection. The following is an example:<br><br>In the URL <b>https://www.example.com:8080/elb?type=loadbalancer</b> , if this parameter is set to <b>\${query}&amp;name=my_name</b> , the URL will be redirected to <b>https://www.example.com:8080/elb?type=loadbalancer&amp;name=my_name</b> . In the example, <b>\${query}</b> indicates <b>type=loadbalancer</b> .<br><br><b>Range:</b> The value can contain only letters, digits, and the special characters: <b>!\$&amp;'()*+,-./:;=?@^_`</b> . The letters are case-sensitive. <b>\$1</b> , <b>\$2</b> , <b>\$3</b> , and all the way to <b>\$9</b> match the wildcard asterisk ( <b>*</b> ) in the requested URL. |
| status_code           | String                                     | <b>Definition:</b> Specifies the status code returned after the requests are redirected.<br><br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>301</b></li><li>• <b>302</b></li><li>• <b>303</b></li><li>• <b>307</b></li><li>• <b>308</b></li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| insert_headers_config | <a href="#">InsertHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| remove_headers_config | <a href="#">RemoveHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

**Table 5-666** RedirectPoolsConfig

| Parameter | Type   | Description                                                                        |
|-----------|--------|------------------------------------------------------------------------------------|
| pool_id   | String | <b>Definition:</b> Specifies the backend server group ID.<br><br><b>Range:</b> N/A |

| Parameter | Type    | Description                                                                                                                                                                                                                                                                                                                                          |
|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| weight    | Integer | <b>Definition:</b> Specifies the weight of the backend server group. Requests are routed to backend server groups based on their weights. The larger the weight is, the higher proportion of requests the backend server group receives. If the weight is set to 0, the backend server group will not accept new requests.<br><b>Range:</b> 0 to 100 |

**Table 5-667** RedirectPoolsStickySessionConfig

| Parameter | Type    | Description                                                                                                                                                                                                    |
|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable sticky session for backend server groups configured in a forwarding policy.<br><b>Default value:</b> <b>false</b> , indicating that sticky session is disabled. |
| timeout   | Integer | <b>Definition:</b> Specifies the stickiness duration, in minutes.<br><b>Range:</b> 1 to 1440                                                                                                                   |

**Table 5-668** RedirectPoolsExtendConfig

| Parameter             | Type                                       | Description                                                                                                                                                                                      |
|-----------------------|--------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rewrite_url_enable    | Boolean                                    | <b>Definition:</b> Specifies whether to set <b>rewrite_url_enable</b> to <b>true</b> .<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option). |
| rewrite_url_config    | <a href="#">RewriteUrlConfig</a> object    | <b>Definition:</b> Specifies the URL for the backend server group that requests are forwarded to.                                                                                                |
| insert_headers_config | <a href="#">InsertHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.                                                                                    |
| remove_headers_config | <a href="#">RemoveHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule.                                                                                   |



| Parameter             | Type                                       | Description                                                       |
|-----------------------|--------------------------------------------|-------------------------------------------------------------------|
| traffic_limit_config  | <a href="#">TrafficLimitConfig</a> object  | <b>Definition:</b> Specifies how requests are limited.            |
| cors_config           | <a href="#">CorsConfig</a> object          | <b>Definition:</b> Specifies the CORS configurations.             |
| traffic_mirror_config | <a href="#">TrafficMirrorConfig</a> object | <b>Definition:</b> Specifies the traffic mirroring configuration. |

**Table 5-669** RewriteUrlConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| host      | String | <b>Definition:</b> Specifies the domain name of the host that requests are redirected to.<br><b>Range:</b> The value can contain letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| path      | String | <b>Definition:</b> Specifies the path that requests are redirected to. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL. If the number of regular expression match groups is less than the specified number, <b>\${path}</b> is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, <b>\$abc#123</b> , and the matching result is <b>#123</b> . If the dollar sign (\$) is followed by a special character, for example, <b>\$#</b> , the matching result is <b>\$#</b> .<br><b>Range:</b> The value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&\$.+?,=!: /() |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| query     | String | <b>Definition:</b> Specifies the query string set in the URL for redirection. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL. If the number of regular expression match groups is less than the specified number, <b>\${path}</b> is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, <b>\$abc#123</b> , and the matching result is <b>#123</b> . If the dollar sign (\$) is followed by a special character, for example, <b>\$#</b> , the matching result is <b>\$#</b> .<br><b>Range:</b> The value can contain only letters, digits, and the special characters: !\$&'()+,-./:;=?@^_`. The letters are case-sensitive. |

**Table 5-670** CorsConfig

| Parameter     | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| allow_origin  | Array of strings | <b>Definition:</b> Specifies the origins that are allowed to access cross-origin resources through a browser. The origin can be a wildcard (*) or one or more URLs.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>Each URL must start with <b>http://</b> or <b>https://</b>, followed by a valid domain name or level-1 wildcard domain name, for example, <b>http://*.test.abc.example.com</b>.</li><li>It is optional to include a port number (ranging from 1 to 65535) in the URL.</li></ul> |
| allow_methods | Array of strings | <b>Definition:</b> Specifies the HTTP methods that the specified URLs can use to access cross-origin resources.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                             |
| allow_headers | Array of strings | <b>Definition:</b> Specifies the request headers that can be carried in CORS requests.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                      |

| Parameter         | Type             | Description                                                                                                                                                                                                                               |
|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| expose_headers    | Array of strings | <b>Definition:</b> Specifies the headers that can be exposed.<br><b>Range:</b> N/A                                                                                                                                                        |
| allow_credentials | Boolean          | <b>Definition:</b> Specifies whether to allow credentials in CORS requests.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Credentials are allowed.</li><li>• <b>false:</b> Credentials are not allowed.</li></ul> |
| max_age           | Long             | <b>Definition:</b> Specifies the maximum duration a preflight request can be cached, in seconds.<br><b>Range:</b> -1 to 172800                                                                                                            |

**Table 5-671** TrafficMirrorConfig

| Parameter                  | Type             | Description                                                                                                         |
|----------------------------|------------------|---------------------------------------------------------------------------------------------------------------------|
| target_ids                 | Array of strings | <b>Definition:</b> Specifies the IDs of the backend server groups that traffic is mirrored to.<br><b>Range:</b> N/A |
| mirror_request_body_enable | Boolean          | Specifies whether to include the mirror request body. The default value is <b>true</b> .<br><b>Range:</b> N/A       |

**Table 5-672** FixedResponseConfig

| Parameter    | Type   | Description                                                                                                                                                                                                                                    |
|--------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| status_code  | String | <b>Definition:</b> Specifies the HTTP status code.<br><b>Range:</b> 200-299, 400-499, 500-599                                                                                                                                                  |
| content_type | String | <b>Definition:</b> Specifies the format of the returned body.<br><b>Range:</b> <ul style="list-style-type: none"><li>• text/plain</li><li>• text/css</li><li>• text/html</li><li>• application/javascript</li><li>• application/json</li></ul> |

| Parameter             | Type                                       | Description                                                                                                    |
|-----------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| message_body          | String                                     | <b>Definition:</b> Specifies the content of the response message body.<br><b>Range:</b> N/A                    |
| insert_headers_config | <a href="#">InsertHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.  |
| remove_headers_config | <a href="#">RemoveHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule. |
| traffic_limit_config  | <a href="#">TrafficLimitConfig</a> object  | <b>Definition:</b> Specifies how requests are limited.                                                         |

**Table 5-673** InsertHeadersConfig

| Parameter | Type                                                | Description                                                                                               |
|-----------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| configs   | Array of <a href="#">InsertHeaderConfig</a> objects | <b>Definition:</b> Specifies the request and response headers you want to add.<br><b>Constraints:</b> N/A |

**Table 5-674** InsertHeaderConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <b>Definition:</b> Specifies the key of the request and response headers.<br><b>Constraints:</b> The following cannot be used as a key.<br>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out<br><b>Range:</b> The value can contain 1 to 40 characters, including letters (case-insensitive), digits, hyphens (-), and underscores (_). |

| Parameter  | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value_type | String | <b>Definition:</b> Specifies the value type of the request and response headers.<br><b>Range:</b> <b>USER_DEFINED</b> , <b>REFERENCE_HEADER</b> , or <b>SYSTEM_DEFINED</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| value      | String | <b>Definition:</b> Specifies the value of the request and response headers.<br><b>Range:</b> The value can contain 1 to 128 characters. ASCII codes 32 through 127 printable characters, asterisks (*), and question marks (?) are also supported. The value cannot start or end with a space and cannot be any of the following: connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, transparent, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-port, x-real-ip, x-forwarded-proto, x-forwarded-elb-ip, x-forwarded-elb-id, x-forwarded-elb-vip, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out. |

**Table 5-675** RemoveHeadersConfig

| Parameter | Type                                                | Description                                                                                                  |
|-----------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| configs   | Array of <a href="#">RemoveHeaderConfig</a> objects | <b>Definition:</b> Specifies the request and response headers you want to remove.<br><b>Constraints:</b> N/A |

**Table 5-676** RemoveHeaderConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <p><b>Definition:</b> Specifies the key of the request and response headers you want to remove.</p> <p><b>Constraints:</b> The following cannot be used as a key.</p> <p>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out</p> <p><b>Range:</b> The value can contain 1 to 40 characters, including letters (case-insensitive), digits, hyphens (-), and underscores (_).</p> |

**Table 5-677** TrafficLimitConfig

| Parameter         | Type    | Description                                                                                                                                                                                                                                                                                                              |
|-------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| qps               | Integer | <p><b>Definition:</b> Specifies the maximum number of queries per second (QPS).</p> <p><b>Range:</b> 0 to 100000. Unit: count/s. <b>0</b> indicates that QPS is not limited.</p>                                                                                                                                         |
| per_source_ip_qps | Integer | <p><b>Definition:</b> Specifies the maximum number of queries per second (QPS) from a source IP address (single client).</p> <p><b>Range:</b> 0 to 100000. Unit: count/s. <b>0</b> indicates that QPS is not limited.</p>                                                                                                |
| burst             | Integer | <p><b>Definition:</b> Specifies the allowed burst queries if the number of queries exceeds the value specified for <b>qps</b>. If the number of burst queries exceeds the value specified for <b>burst</b>, 503 Service Unavailable will be returned to the client.</p> <p><b>Range:</b> 0 to 100000. Unit: count/s.</p> |

## Example Requests

Querying forwarding policies

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/l7policies?display_all_rules=true
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "request_id" : "c50b2ac7bb869fd6c37c1a449632097d",
 "l7policies" : [{
 "name" : "",
 "redirect_pool_id" : null,
 "description" : "",
 "admin_state_up" : true,
 "rules" : [{
 "id" : "a8310d08-6d4c-413a-aa45-7e43f8183193"
 }],
 "project_id" : "0c1503d710984bad92306faea3654dfd",
 "listener_id" : "8b9d7d2c-49dc-43ba-99f5-3bc476bdf10b",
 "redirect_url" : null,
 "redirect_url_config" : null,
 "redirect_pools_config" : [{
 "weight" : 100,
 "pool_id" : "599fdd99-d908-4dff-9db3-15eec274dfed"
 }],
 "redirect_pools_sticky_session_config" : {
 "enable" : false,
 "timeout" : 1000
 },
 "fixed_response_config" : null,
 "redirect_listener_id" : null,
 "action" : "REDIRECT_TO_POOL",
 "position" : 100,
 "priority" : 1,
 "provisioning_status" : "ACTIVE",
 "id" : "10ebd807-54b1-4f73-a21e-4e7af939d13b",
 "enterprise_project_id" : "0",
 "created_at" : "2025-04-15T08:36:43Z",
 "updated_at" : "2025-04-15T11:49:56Z",
 "redirect_pools_extend_config" : {
 "rewrite_url_enable" : false,
 "rewrite_url_config" : null,
 "insert_headers_config" : {
 "configs" : [{
 "key" : "test",
 "value" : "xxx",
 "value_type" : "USER_DEFINED"
 }]
 },
 "remove_headers_config" : {
 "configs" : [{
 "key" : "req-trace-id"
 }]
 },
 "traffic_limit_config" : null,
 "cors_config" : null,
 "traffic_mirror_config" : null
 }
 }], {
 "name" : "l7policy-67",
 "redirect_pool_id" : "9aca3ee0-a19a-4a14-8712-4b3e0e3d890c",
 "description" : "",
 "admin_state_up" : true,
```

```
"rules" : [{
 "id" : "03b0acc5-07e5-4c1d-a89e-d97ae9c94ab3"
}],
"project_id" : "0c1503d710984bad92306faea3654dfd",
"listener_id" : "13b7b0e3-4cf6-428e-af88-051365930b71",
"redirect_url" : null,
"redirect_url_config" : null,
"redirect_pools_config" : [],
"redirect_pools_sticky_session_config" : {
 "enable" : false,
 "timeout" : 1440
},
"fixed_response_config" : null,
"redirect_listener_id" : null,
"action" : "REDIRECT_TO_POOL",
"position" : 100,
"priority" : 5,
"provisioning_status" : "ACTIVE",
"id" : "1534dd84-44bf-4e0c-84b0-8842d5f828e2",
"enterprise_project_id" : "0",
"created_at" : "2025-02-13T09:00:01Z",
"updated_at" : "2025-02-13T09:00:01Z",
"redirect_pools_extend_config" : null
}],
"page_info" : {
 "next_marker" : "1534dd84-44bf-4e0c-84b0-8842d5f828e2",
 "previous_marker" : "10ebd807-54b1-4f73-a21e-4e7af939d13b",
 "current_count" : 2
}
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListL7PoliciesSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
```



```
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
ListL7PoliciesRequest request = new ListL7PoliciesRequest();
try {
 ListL7PoliciesResponse response = client.listL7Policies(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ListL7PoliciesRequest()
 response = client.list_l7_policies(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)
```

```
func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ListL7PoliciesRequest{}
 response, err := client.ListL7Policies(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.14.3 Querying the Details of a Forwarding Policy

### Function

This API is used to view the details of a forwarding policy.

### Calling Method

For details, see [Calling APIs](#).

## URI

GET /v3/{project\_id}/elb/l7policies/{l7policy\_id}

**Table 5-678** Path Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id  | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| l7policy_id | Yes       | String | <b>Definition:</b> Specifies the forwarding policy ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                        |

## Request Parameters

**Table 5-679** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-680** Response body parameters

| Parameter  | Type                   | Description                                                                                                                                                                          |
|------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                 | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| l7policy   | <b>L7Policy</b> object | <b>Definition:</b> Specifies the forwarding policy.                                                                                                                                  |

**Table 5-681** L7Policy

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| action         | String  | <b>Definition:</b> Specifies the action of the forwarding policy.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL:</b> Requests are forwarded to another backend server group.</li><li>• <b>REDIRECT_TO_LISTENER:</b> Requests are redirected to an HTTPS listener.</li><li>• <b>REDIRECT_TO_URL:</b> Requests are redirected to another URL.</li><li>• <b>FIXED_RESPONSE:</b> A fixed response body is returned.</li></ul> |
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the forwarding policy.<br><b>Range:</b> The value can only be <b>true</b> .                                                                                                                                                                                                                                                                                                                    |
| description    | String  | <b>Definition:</b> Provides supplementary information about the forwarding policy.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                  |
| id             | String  | <b>Definition:</b> Specifies the forwarding policy ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                              |
| listener_id    | String  | <b>Definition:</b> Specifies the ID of the listener with which the forwarding policy is associated.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                 |

| Parameter            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                |
|----------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name                 | String  | <b>Definition:</b> Specifies the forwarding policy name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                              |
| position             | Integer | <b>Definition:</b> Specifies the priority of the forwarding policy. The priority cannot be updated.<br><br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                            |
| priority             | Integer | <b>Definition:</b> Specifies the priority of the forwarding policy. A smaller value indicates a higher priority.<br><b>Range:</b> <ul style="list-style-type: none"><li>• If <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, the priority ranges from 0 to 10,000.</li><li>• If <b>action</b> is set to other values, the priority ranges from 1 to 10,000.</li></ul> |
| project_id           | String  | <b>Definition:</b> Specifies the ID of the project where the forwarding policy is used.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                               |
| provisioning_status  | String  | <b>Definition:</b> Specifies the provisioning status of the forwarding policy.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ACTIVE</b> (default): The forwarding policy is provisioned successfully.</li><li>• <b>ERROR</b>: The forwarding policy has the same rule as another forwarding policy added to the same listener.</li></ul>                     |
| redirect_pool_id     | String  | <b>Definition:</b> Specifies the ID of the backend server group to which requests will be forwarded.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                  |
| redirect_listener_id | String  | <b>Definition:</b> Specifies the ID of the listener to which requests are redirected.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                 |

| Parameter                            | Type                                                    | Description                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_url                         | String                                                  | <b>Definition:</b> Specifies the URL to which requests will be forwarded.<br><b>Range:</b> The value must be in the format of <i>protocol://host:port/path?query</i> .<br>This parameter is unsupported. Please do not use it.                                                                                                      |
| rules                                | Array of <a href="#">RuleRef</a> objects                | <b>Definition:</b> Lists the forwarding rules in the forwarding policy.                                                                                                                                                                                                                                                             |
| redirect_url_config                  | <a href="#">RedirectUrlConfig</a> object                | <b>Definition:</b> Specifies the URL to which requests are forwarded.                                                                                                                                                                                                                                                               |
| redirect_pools_config                | Array of <a href="#">RedirectPoolsConfig</a> objects    | <b>Definition:</b> Specifies the backend server groups that the requests are forwarded to. This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b> . If this parameter is specified and <b>enhance_l7policy_enable</b> is set to <b>false</b> , an error will be returned.                       |
| redirect_pools_sticky_session_config | <a href="#">RedirectPoolsStickySessionConfig</a> object | <b>Definition:</b> Specifies whether to enable sticky session for backend server groups configured for a forwarding policy. The load balancer generates a cookie after it receives a request from a client. All subsequent requests with the same cookie are routed to the same backend server group.                               |
| redirect_pools_extend_config         | <a href="#">RedirectPoolsExtendConfig</a> object        | <b>Definition:</b> Specifies the backend server group that requests are forwarded to.                                                                                                                                                                                                                                               |
| fixed_response_config                | <a href="#">FixedResponseConfig</a> object              | <b>Definition:</b> Specifies the configuration of the page that will be returned.                                                                                                                                                                                                                                                   |
| created_at                           | String                                                  | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                                                                           |
|-----------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at            | String | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br><br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| enterprise_project_id | String | <b>Definition:</b> Specifies the enterprise project ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                          |

**Table 5-682** RuleRef

| Parameter | Type   | Description                                                               |
|-----------|--------|---------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the forwarding rule ID.<br><b>Range:</b> N/A |

**Table 5-683** RedirectUrlConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                |
|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol  | String | <b>Definition:</b> Specifies the protocol for redirection.<br><b>Range:</b> <ul style="list-style-type: none"><li>• HTTP</li><li>• HTTPS</li><li>• <b>\${protocol}</b>: indicates that the protocol in the request will be used.</li></ul> |
| host      | String | <b>Definition:</b> Specifies the name of the host that requests are redirected to.<br><b>Range:</b> The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit.                        |
| port      | String | <b>Definition:</b> Specifies the port that requests are redirected to.<br><b>Range:</b> N/A                                                                                                                                                |

| Parameter             | Type                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------|-----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| path                  | String                            | <b>Definition:</b> Specifies the path that requests are redirected to.<br><b>Range:</b> The value can contain only letters, digits, and special characters: <code>_~';@^-%#&amp;\$. *+?,=!: \\V()[]{} </code> and must start with a slash (/).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| query                 | String                            | <b>Definition:</b> Specifies the query string set in the URL for redirection. The following is an example:<br>In the URL <b>https://www.example.com:8080/elb?type=loadbalancer</b> , if this parameter is set to <b>\${query}&amp;name=my_name</b> , the URL will be redirected to <b>https://www.example.com:8080/elb?type=loadbalancer&amp;name=my_name</b> . In the example, <b>\${query}</b> indicates <b>type=loadbalancer</b> .<br><b>Range:</b> The value can contain only letters, digits, and the special characters: <code>!\$&amp;'()*+,-./:;=?@^_` </code> . The letters are case-sensitive. <code>\$1, \$2, \$3, </code> and all the way to <code>\$9 </code> match the wildcard asterisk (*) in the requested URL. |
| status_code           | String                            | <b>Definition:</b> Specifies the status code returned after the requests are redirected.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 301</li><li>• 302</li><li>• 303</li><li>• 307</li><li>• 308</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| insert_headers_config | <b>InsertHeadersConfig</b> object | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| remove_headers_config | <b>RemoveHeadersConfig</b> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |



**Table 5-684** RedirectPoolsConfig

| Parameter | Type    | Description                                                                                                                                                                                                                                                                                                                                          |
|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pool_id   | String  | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                       |
| weight    | Integer | <b>Definition:</b> Specifies the weight of the backend server group. Requests are routed to backend server groups based on their weights. The larger the weight is, the higher proportion of requests the backend server group receives. If the weight is set to 0, the backend server group will not accept new requests.<br><b>Range:</b> 0 to 100 |

**Table 5-685** RedirectPoolsStickySessionConfig

| Parameter | Type    | Description                                                                                                                                                                                                    |
|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable sticky session for backend server groups configured in a forwarding policy.<br><b>Default value:</b> <b>false</b> , indicating that sticky session is disabled. |
| timeout   | Integer | <b>Definition:</b> Specifies the stickiness duration, in minutes.<br><b>Range:</b> 1 to 1440                                                                                                                   |

**Table 5-686** RedirectPoolsExtendConfig

| Parameter          | Type                                    | Description                                                                                                                                                                                      |
|--------------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rewrite_url_enable | Boolean                                 | <b>Definition:</b> Specifies whether to set <b>rewrite_url_enable</b> to <b>true</b> .<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option). |
| rewrite_url_config | <a href="#">RewriteUrlConfig</a> object | <b>Definition:</b> Specifies the URL for the backend server group that requests are forwarded to.                                                                                                |

| Parameter             | Type                                       | Description                                                                                                    |
|-----------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| insert_headers_config | <a href="#">InsertHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.  |
| remove_headers_config | <a href="#">RemoveHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule. |
| traffic_limit_config  | <a href="#">TrafficLimitConfig</a> object  | <b>Definition:</b> Specifies how requests are limited.                                                         |
| cors_config           | <a href="#">CorsConfig</a> object          | <b>Definition:</b> Specifies the CORS configurations.                                                          |
| traffic_mirror_config | <a href="#">TrafficMirrorConfig</a> object | <b>Definition:</b> Specifies the traffic mirroring configuration.                                              |

**Table 5-687** RewriteUrlConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| host      | String | <b>Definition:</b> Specifies the domain name of the host that requests are redirected to.<br><br><b>Range:</b> The value can contain letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| path      | String | <b>Definition:</b> Specifies the path that requests are redirected to. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL. If the number of regular expression match groups is less than the specified number, <b>\${path}</b> is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, <b>\$abc#123</b> , and the matching result is <b>#123</b> . If the dollar sign (\$) is followed by a special character, for example, <b>\$#</b> , the matching result is <b>\$#</b> .<br><br><b>Range:</b> The value must start with a slash (/) and can contain only letters, digits, and special characters: <code>_~';@^-%#&amp;\$.+?,:! /()</code> |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| query     | String | <b>Definition:</b> Specifies the query string set in the URL for redirection. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL. If the number of regular expression match groups is less than the specified number, <b>\${path}</b> is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, <b>\$abc#123</b> , and the matching result is <b>#123</b> . If the dollar sign (\$) is followed by a special character, for example, <b>\$#</b> , the matching result is <b>\$#</b> .<br><b>Range:</b> The value can contain only letters, digits, and the special characters: !\$&'()+,-./:;=?@^_`. The letters are case-sensitive. |

**Table 5-688** CorsConfig

| Parameter     | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| allow_origin  | Array of strings | <b>Definition:</b> Specifies the origins that are allowed to access cross-origin resources through a browser. The origin can be a wildcard (*) or one or more URLs.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>Each URL must start with <b>http://</b> or <b>https://</b>, followed by a valid domain name or level-1 wildcard domain name, for example, <b>http://*.test.abc.example.com</b>.</li><li>It is optional to include a port number (ranging from 1 to 65535) in the URL.</li></ul> |
| allow_methods | Array of strings | <b>Definition:</b> Specifies the HTTP methods that the specified URLs can use to access cross-origin resources.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                             |
| allow_headers | Array of strings | <b>Definition:</b> Specifies the request headers that can be carried in CORS requests.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                      |

| Parameter         | Type             | Description                                                                                                                                                                                                                               |
|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| expose_headers    | Array of strings | <b>Definition:</b> Specifies the headers that can be exposed.<br><b>Range:</b> N/A                                                                                                                                                        |
| allow_credentials | Boolean          | <b>Definition:</b> Specifies whether to allow credentials in CORS requests.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Credentials are allowed.</li><li>• <b>false:</b> Credentials are not allowed.</li></ul> |
| max_age           | Long             | <b>Definition:</b> Specifies the maximum duration a preflight request can be cached, in seconds.<br><b>Range:</b> -1 to 172800                                                                                                            |

**Table 5-689** TrafficMirrorConfig

| Parameter                  | Type             | Description                                                                                                         |
|----------------------------|------------------|---------------------------------------------------------------------------------------------------------------------|
| target_ids                 | Array of strings | <b>Definition:</b> Specifies the IDs of the backend server groups that traffic is mirrored to.<br><b>Range:</b> N/A |
| mirror_request_body_enable | Boolean          | Specifies whether to include the mirror request body. The default value is <b>true</b> .<br><b>Range:</b> N/A       |

**Table 5-690** FixedResponseConfig

| Parameter    | Type   | Description                                                                                                                                                                                                                                    |
|--------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| status_code  | String | <b>Definition:</b> Specifies the HTTP status code.<br><b>Range:</b> 200-299, 400-499, 500-599                                                                                                                                                  |
| content_type | String | <b>Definition:</b> Specifies the format of the returned body.<br><b>Range:</b> <ul style="list-style-type: none"><li>• text/plain</li><li>• text/css</li><li>• text/html</li><li>• application/javascript</li><li>• application/json</li></ul> |

| Parameter             | Type                                       | Description                                                                                                    |
|-----------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| message_body          | String                                     | <b>Definition:</b> Specifies the content of the response message body.<br><b>Range:</b> N/A                    |
| insert_headers_config | <a href="#">InsertHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.  |
| remove_headers_config | <a href="#">RemoveHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule. |
| traffic_limit_config  | <a href="#">TrafficLimitConfig</a> object  | <b>Definition:</b> Specifies how requests are limited.                                                         |

**Table 5-691** InsertHeadersConfig

| Parameter | Type                                                | Description                                                                                               |
|-----------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| configs   | Array of <a href="#">InsertHeaderConfig</a> objects | <b>Definition:</b> Specifies the request and response headers you want to add.<br><b>Constraints:</b> N/A |

**Table 5-692** InsertHeaderConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <b>Definition:</b> Specifies the key of the request and response headers.<br><b>Constraints:</b> The following cannot be used as a key.<br>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out<br><b>Range:</b> The value can contain 1 to 40 characters, including letters (case-insensitive), digits, hyphens (-), and underscores (_). |

| Parameter  | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value_type | String | <b>Definition:</b> Specifies the value type of the request and response headers.<br><b>Range:</b> <b>USER_DEFINED</b> , <b>REFERENCE_HEADER</b> , or <b>SYSTEM_DEFINED</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| value      | String | <b>Definition:</b> Specifies the value of the request and response headers.<br><b>Range:</b> The value can contain 1 to 128 characters. ASCII codes 32 through 127 printable characters, asterisks (*), and question marks (?) are also supported. The value cannot start or end with a space and cannot be any of the following: connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, transparent, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-port, x-real-ip, x-forwarded-proto, x-forwarded-elb-ip, x-forwarded-elb-id, x-forwarded-elb-vip, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out. |

**Table 5-693** RemoveHeadersConfig

| Parameter | Type                                                | Description                                                                                                  |
|-----------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| configs   | Array of <a href="#">RemoveHeaderConfig</a> objects | <b>Definition:</b> Specifies the request and response headers you want to remove.<br><b>Constraints:</b> N/A |

**Table 5-694** RemoveHeaderConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <p><b>Definition:</b> Specifies the key of the request and response headers you want to remove.</p> <p><b>Constraints:</b> The following cannot be used as a key.</p> <p>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out</p> <p><b>Range:</b> The value can contain 1 to 40 characters, including letters (case-insensitive), digits, hyphens (-), and underscores (_).</p> |

**Table 5-695** TrafficLimitConfig

| Parameter         | Type    | Description                                                                                                                                                                                                                                                                                                              |
|-------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| qps               | Integer | <p><b>Definition:</b> Specifies the maximum number of queries per second (QPS).</p> <p><b>Range:</b> 0 to 100000. Unit: count/s. <b>0</b> indicates that QPS is not limited.</p>                                                                                                                                         |
| per_source_ip_qps | Integer | <p><b>Definition:</b> Specifies the maximum number of queries per second (QPS) from a source IP address (single client).</p> <p><b>Range:</b> 0 to 100000. Unit: count/s. <b>0</b> indicates that QPS is not limited.</p>                                                                                                |
| burst             | Integer | <p><b>Definition:</b> Specifies the allowed burst queries if the number of queries exceeds the value specified for <b>qps</b>. If the number of burst queries exceeds the value specified for <b>burst</b>, 503 Service Unavailable will be returned to the client.</p> <p><b>Range:</b> 0 to 100000. Unit: count/s.</p> |

## Example Requests

Querying the details of a forwarding policy

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/l7policies/cf4360fd-8631-41ff-a6f5-b72c35da74be
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "l7policy": {
 "name": "my policy",
 "redirect_pool_id": null,
 "description": "",
 "admin_state_up": true,
 "rules": [{
 "id": "a8310d08-6d4c-413a-aa45-7e43f8183193"
 }],
 "project_id": "0c1503d710984bad92306faea3654dfd",
 "listener_id": "8b9d7d2c-49dc-43ba-99f5-3bc476bdf10b",
 "redirect_url": null,
 "redirect_url_config": null,
 "redirect_pools_config": [{
 "weight": 100,
 "pool_id": "599fdd99-d908-4dff-9db3-15eec274dfed"
 }],
 "redirect_pools_sticky_session_config": {
 "enable": false,
 "timeout": 1000
 },
 "fixed_response_config": null,
 "redirect_listener_id": null,
 "action": "REDIRECT_TO_POOL",
 "position": 100,
 "priority": 1,
 "provisioning_status": "ACTIVE",
 "id": "10ebd807-54b1-4f73-a21e-4e7af939d13b",
 "enterprise_project_id": "0",
 "created_at": "2025-04-15T08:36:43Z",
 "updated_at": "2025-04-15T11:49:56Z",
 "redirect_pools_extend_config": {
 "rewrite_url_enable": false,
 "rewrite_url_config": null,
 "insert_headers_config": {
 "configs": [{
 "key": "test",
 "value": "xxx",
 "value_type": "USER_DEFINED"
 }]
 },
 "remove_headers_config": {
 "configs": [{
 "key": "req-trace-id"
 }]
 },
 "traffic_limit_config": null,
 "cors_config": null,
 "traffic_mirror_config": null
 }
 },
 "request_id": "54961722be349499068aa73a5f91745a"
}
```



## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowL7PolicySolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowL7PolicyRequest request = new ShowL7PolicyRequest();
 request.withL7policyId("{l7policy_id}");
 try {
 ShowL7PolicyResponse response = client.showL7Policy(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

### Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *
```

```
if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ShowL7PolicyRequest()
 request.l7policy_id = "{l7policy_id}"
 response = client.show_l7_policy(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ShowL7PolicyRequest{}
 request.L7policyId = "{l7policy_id}"
 response, err := client.ShowL7Policy(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

```
}
}
```

More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

Error Codes

See [Error Codes](#).

5.14.4 Modifying a Forwarding Policy

Function

This API is used to update a forwarding policy.

Calling Method

For details, see [Calling APIs](#).

URI

PUT /v3/{project\_id}/elb/l7policies/{l7policy\_id}

Table 5-696 Path Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                         |
|-------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------|
| l7policy_id | Yes       | String | <b>Definition:</b> Specifies the forwarding policy ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-697** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-698** Request body parameters

| Parameter | Mandatory | Type                                        | Description                                                                    |
|-----------|-----------|---------------------------------------------|--------------------------------------------------------------------------------|
| l7policy  | Yes       | <a href="#">UpdateL7PolicyOption</a> object | <b>Definition:</b> Specifies the forwarding policy.<br><b>Constraints:</b> N/A |

**Table 5-699** UpdateL7PolicyOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                   |
|----------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | <b>Definition:</b> Specifies the administrative status of the forwarding policy.<br><b>Constraints:</b> The value can only be <b>true</b> .<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter            | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description          | No        | String | <b>Definition:</b> Provides supplementary information about the forwarding policy.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| name                 | No        | String | <b>Definition:</b> Specifies the forwarding policy name.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| redirect_listener_id | No        | String | <b>Definition:</b> Specifies the ID of the listener to which requests are redirected.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, this parameter cannot be updated to an empty value or be <b>null</b>.</li><li>• The listener's protocol must be <b>HTTPS</b> or <b>TERMINATED_HTTPS</b>.</li><li>• A listener added to another load balancer is not allowed.</li><li>• This parameter cannot be passed in the API for adding or updating a forwarding policy if <b>action</b> is set to <b>REDIRECT_TO_POOL</b>.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter        | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_pool_id | No        | String | <p><b>Definition:</b> Specifies the ID of the backend server group to which requests will be forwarded.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The specified backend server group cannot be the default backend server group associated with the listener, or any backend server group associated with the forwarding policies of other listeners.</li><li>• This parameter is valid when <b>action</b> is set to <b>REDIRECT_TO_POOL</b>. This parameter cannot be updated to an empty value and cannot be <b>null</b>.</li><li>• If this parameter is specified when <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, an error will be reported.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

| Parameter             | Mandatory | Type                                                       | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------|-----------|------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_pools_config | No        | Array of <a href="#">UpdateRedirectPoolsConfig</a> objects | <p><b>Definition:</b> Specifies the new weights of backend server group that the requests are forwarded to. This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b>. If this parameter is specified and <b>enhance_l7policy_enable</b> is set to <b>false</b>, an error will be returned.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>action</b> is set to <b>REDIRECT_TO_POOL</b>, specify either <b>redirect_pool_id</b> or <b>redirect_pools_config</b>. If both are specified, only <b>redirect_pools_config</b> takes effect.</li><li>• If <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b> or <b>REDIRECT_TO_URL</b> and this parameter is specified, an error will be returned.</li><li>• A maximum of five backend server groups can be configured for a forwarding policy. Each backend server group must be unique.</li><li>• All backend server groups will be overwritten, and the backend server groups that are not included in the request parameter in the request body will be removed.</li></ul> <p>This parameter is unsupported for shared load balancers. If it is passed, an error will be returned.</p> |

| Parameter                            | Mandatory | Type                                                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|--------------------------------------|-----------|---------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_pools_sticky_session_config | No        | <a href="#">UpdateRedirectPoolsStickySessionConfig</a> object | <p><b>Definition:</b> Specifies whether to enable sticky session for backend server groups configured for a forwarding policy. The load balancer generates a cookie after it receives a request from a client. All subsequent requests with the same cookie are routed to the same backend server group.</p> <p><b>Constraints:</b> This parameter is unsupported for shared load balancers. If it is passed, an error will be returned.</p>                                                                                                                                                                                                                                                            |
| redirect_url_config                  | No        | <a href="#">UpdateRedirectUrlConfig</a> object                | <p><b>Definition:</b> Specifies the URL to which requests are forwarded.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b>. If this parameter is passed and <b>enhance_l7policy_enable</b> is set to <b>false</b>, an error will be returned.</li><li>• This parameter is mandatory when <b>action</b> is set to <b>REDIRECT_TO_URL</b>. It cannot be specified if the value of <b>action</b> is not <b>REDIRECT_TO_URL</b>. Otherwise, an error is reported.</li><li>• For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.</li></ul> |



| Parameter                    | Mandatory | Type                                                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------|-----------|--------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| fixed_response_config        | No        | <a href="#">UpdateFixedResponseConfig</a> object       | <b>Definition:</b> Specifies the configuration of the page that will be returned.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b>. If this parameter is passed and <b>enhance_l7policy_enable</b> is set to <b>false</b>, an error will be returned.</li><li>• This parameter is mandatory when <b>action</b> is set to <b>FIXED_RESPONSE</b>. It cannot be specified if <b>action</b> is set to other values.</li><li>• For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.</li></ul> |
| redirect_pools_extend_config | No        | <a href="#">UpdateRedirectPoolsExtendConfig</a> object | <b>Definition:</b> Specifies the backend server group that requests are forwarded to.<br><b>Constraints:</b> This parameter takes effect only when <b>action</b> is set to <b>REDIRECT_TO_POOL</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| rules                        | No        | Array of <a href="#">CreateRuleOption</a> objects      | <b>Definition:</b> Lists the forwarding rules in the forwarding policy.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• Each list can contain a maximum of 10 forwarding rules (if <b>conditions</b> is specified, a condition is considered as a rule). If <b>type</b> is set to <b>HOST_NAME</b>, <b>PATH</b>, <b>METHOD</b>, or <b>SOURCE_IP</b>, only one forwarding rule can be created for each type.</li><li>• The entire list will be replaced if you update it.</li></ul>                                                                                                                                                  |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| priority  | No        | Integer | <p><b>Definition:</b> Specifies the priority of the forwarding policy. A smaller value indicates a higher priority.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The priority must be unique for forwarding policies of the same listener.</li><li>• This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b>. If this parameter is passed and <b>enhance_l7policy_enable</b> is set to <b>false</b>, an error will be returned.</li><li>• If <b>enhance_l7policy_enable</b> is set to <b>false</b>, forwarding policies are automatically prioritized based on the original policy sorting logic. The priorities of domain names are independent from each other. For the same domain name, the priorities are sorted in the order of exact match (<b>EQUAL_TO</b>), prefix match (<b>STARTS_WITH</b>), and regular expression match (<b>REGEX</b>). If the matching types are the same, the longer the path is, the higher the priority is. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default.</li><li>• This parameter is unsupported for shared load balancers.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, the priority ranges from 0 to 10,000.</li></ul> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <ul style="list-style-type: none"><li>• If <b>action</b> is set to other values, the priority ranges from 1 to 10,000.</li></ul> <p><b>Default value:</b></p> <ul style="list-style-type: none"><li>• If this parameter is not passed and <b>enhance_l7policy_enable</b> is set to <b>false</b>, the priority of the new forwarding policy is 1.</li><li>• If <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, the priority of the new forwarding policy is <b>0</b>.</li><li>• If <b>action</b> is set to other values, the priority of the new forwarding policy will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default.<ul style="list-style-type: none"><li>– If there is no forwarding policy, the priority of a new forwarding policy will be 1 by default.</li><li>– If the priority of an existing forwarding policy is the maximum value (10,000), the forwarding policy will fail to be created because the maximum value will be exceeded. In this case, specify a value or adjust the priorities of existing forwarding policies.</li></ul></li></ul> |

**Table 5-700** UpdateRedirectPoolsConfig

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pool_id   | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                       |
| weight    | No        | String | <b>Definition:</b> Specifies the weight of the backend server group. Requests are routed to backend server groups based on their weights. The larger the weight is, the higher proportion of requests the backend server group receives. If the weight is set to 0, the backend server group will not accept new requests.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 100<br><b>Default value:</b> N/A |

**Table 5-701** UpdateRedirectPoolsStickySessionConfig

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                            |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | No        | Boolean | <b>Definition:</b> Specifies whether to enable sticky session for backend server groups configured in a forwarding policy.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> false, indicating that sticky session is disabled. |
| timeout   | No        | Integer | <b>Definition:</b> Specifies the stickiness duration, in minutes.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 1440<br><b>Default value:</b> 1440                                                                                                  |

**Table 5-702** UpdateRedirectUrlConfig

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol  | No        | String | <b>Definition:</b> Specifies the protocol for redirection.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• HTTP</li><li>• HTTPS</li><li>• <b>\${protocol}</b>: indicates that the protocol in the request will be used.</li></ul> <b>Default value:</b> N/A                                                                            |
| host      | No        | String | <b>Definition:</b> Specifies the name of the host that requests are redirected to.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit.<br><b>Default value:</b> <b>\${host}</b> , indicating that the host in the request will be used.                            |
| port      | No        | String | <b>Definition:</b> Specifies the port that requests are redirected to.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> <b>\${port}</b> , indicating that the port in the request will be used.                                                                                                                                                    |
| path      | No        | String | <b>Definition:</b> Specifies the path that requests are redirected to.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain only letters, digits, and special characters: <code>_~';@^-%#&amp;\$. *+? ,=!: \\\/(){} </code> and must start with a slash (/).<br><b>Default value:</b> <b>\${path}</b> , indicating that the path in the request will be used. |

| Parameter             | Mandatory | Type                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------|-----------|----------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| query                 | No        | String                           | <p><b>Definition:</b> Specifies the query string set in the URL for redirection. The following is an example:</p> <p>In the URL <b>https://www.example.com:8080/elb?type=loadbalancer</b>, if this parameter is set to <b>\${query}&amp;name=my_name</b>, the URL will be redirected to <b>https://www.example.com:8080/elb?type=loadbalancer&amp;name=my_name</b>. In the example, <b>\${query}</b> indicates <b>type=loadbalancer</b>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> The value can contain only letters, digits, and the special characters: <b>!\$&amp;'()*+,-./:;=?@^_`</b>. The letters are case-sensitive. <b>\$1</b>, <b>\$2</b>, <b>\$3</b>, and all the way to <b>\$9</b> match the wildcard asterisk (<b>*</b>) in the requested URL.</p> <p><b>Default value:</b> <b>\${query}</b>, indicating that the query string in the request will be used.</p> |
| status_code           | No        | String                           | <p><b>Definition:</b> Specifies the status code returned after the requests are redirected.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• 301</li><li>• 302</li><li>• 303</li><li>• 307</li><li>• 308</li></ul> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| insert_headers_config | No        | UpdateInsertHeadersConfig object | <p><b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.</p> <p><b>Constraints:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Parameter             | Mandatory | Type                                             | Description                                                                                                                                 |
|-----------------------|-----------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| remove_headers_config | No        | <a href="#">UpdateRemoveHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule.<br><b>Default value:</b> N/A |

**Table 5-703** UpdateFixedResponseConfig

| Parameter             | Mandatory | Type                                             | Description                                                                                                                                                                                                                                                                                                      |
|-----------------------|-----------|--------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| status_code           | No        | String                                           | <b>Definition:</b> Specifies the HTTP status code.<br><b>Constraints:</b> N/A<br><b>Range:</b> 200-299, 400-499, 500-599<br><b>Default value:</b> N/A                                                                                                                                                            |
| content_type          | No        | String                                           | <b>Definition:</b> Specifies the format of the returned body.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• text/plain</li><li>• text/css</li><li>• text/html</li><li>• application/javascript</li><li>• application/json</li></ul> <b>Default value:</b> application/json |
| message_body          | No        | String                                           | <b>Definition:</b> Specifies the content of the response message body.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                              |
| insert_headers_config | No        | <a href="#">UpdateInsertHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.<br><b>Constraints:</b> N/A                                                                                                                                                                         |

| Parameter             | Mandatory | Type                                             | Description                                                                                                                                 |
|-----------------------|-----------|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| remove_headers_config | No        | <a href="#">UpdateRemoveHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule.<br><b>Default value:</b> N/A |
| traffic_limit_config  | No        | <a href="#">UpdateTrafficLimitConfig</a> object  | <b>Definition:</b> Specifies how requests are limited.<br><b>Constraints:</b> N/A                                                           |

**Table 5-704** UpdateRedirectPoolsExtendConfig

| Parameter             | Mandatory | Type                                             | Description                                                                                                                                                                                                                                              |
|-----------------------|-----------|--------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rewrite_url_enable    | No        | Boolean                                          | <b>Definition:</b> Specifies whether to set <b>rewrite_url_enable</b> to <b>true</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A |
| rewrite_url_config    | No        | <a href="#">UpdateRewriteUrlConfig</a> object    | <b>Definition:</b> Specifies the URL for the backend server group that requests are forwarded to.<br><b>Constraints:</b> This parameter takes effect only when <b>action</b> is set to <b>REDIRECT_TO_POOL</b> .                                         |
| insert_headers_config | No        | <a href="#">UpdateInsertHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.<br><b>Constraints:</b> N/A                                                                                                                 |
| remove_headers_config | No        | <a href="#">UpdateRemoveHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule.<br><b>Default value:</b> N/A                                                                                                              |
| traffic_limit_config  | No        | <a href="#">UpdateTrafficLimitConfig</a> object  | <b>Definition:</b> Specifies how requests are limited.<br><b>Constraints:</b> N/A                                                                                                                                                                        |



| Parameter             | Mandatory | Type                             | Description                                                                                  |
|-----------------------|-----------|----------------------------------|----------------------------------------------------------------------------------------------|
| cors_config           | No        | CreateCorsConfig object          | <b>Definition:</b> Specifies the CORS configurations.<br><b>Constraints:</b> N/A             |
| traffic_mirror_config | No        | CreateTrafficMirrorConfig object | <b>Definition:</b> Specifies the traffic mirroring configuration.<br><b>Constraints:</b> N/A |

**Table 5-705** UpdateRewriteUrlConfig

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| host      | No        | String | <b>Definition:</b> Specifies the domain name of the host that requests are redirected to.<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| path      | No        | String | <b>Definition:</b> Specifies the path that requests are redirected to. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL. If the number of regular expression match groups is less than the specified number, <b>\${path}</b> is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, <b>\$abc#123</b> , and the matching result is <b>#123</b> . If the dollar sign (\$) is followed by a special character, for example, <b>\$#</b> , the matching result is <b>\$#</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&\$.+? ,=!: /()<br><b>Default value:</b> N/A |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| query     | No        | String | <b>Definition:</b> Specifies the query string set in the URL for redirection. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL. If the number of regular expression match groups is less than the specified number, <b>\${path}</b> is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, <b>\$abc#123</b> , and the matching result is <b>#123</b> . If the dollar sign (\$) is followed by a special character, for example, <b>\$#</b> , the matching result is <b>\$#</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain only letters, digits, and the special characters: !&'() +,-./:;=?@^_`. The letters are case-sensitive.<br><b>Default value:</b> N/A |

**Table 5-706** UpdateInsertHeadersConfig

| Parameter | Mandatory | Type                                                      | Description                                                                                                                              |
|-----------|-----------|-----------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| configs   | Yes       | Array of <a href="#">UpdateInsertHeaderConfig</a> objects | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.<br><b>Constraints:</b> N/A |

**Table 5-707** UpdateInsertHeaderConfig

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key        | Yes       | String | <b>Definition:</b> Specifies the key of the header you want to write into the request that matches the forwarding rule.<br><b>Constraints:</b> The following cannot be used as a key.<br>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out<br><b>Range:</b> The value can contain 1 to 40 characters, including letters (case-insensitive), digits, hyphens (-), and underscores (_).<br><b>Default value:</b> N/A |
| value_type | Yes       | String | <b>Definition:</b> Specifies the value type of the header.<br><b>Constraints:</b> N/A<br><b>Range:</b> <b>USER_DEFINED</b> , <b>REFERENCE_HEADER</b> , or <b>SYSTEM_DEFINED</b><br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | Yes       | String | <p><b>Definition:</b> Specifies the value of the header.</p> <p><b>Constraints:</b> If <b>value_type</b> is set to <b>SYSTEM_DEFINED</b>, the value can only be CLIENT-PORT, CLIENT-IP, ELB-PORT, ELB-IP, ELB-VIP, TLS-PORT, TLS-CIPHER, CLIENTCERT-SUBJECTDN, CLIENTCERT-ISSUERDN, CLIENTCERT-FINGERPRINT, CLIENTCERT-CLIENTVERIFY, CLIENTCERT-SERIALNUMBER, CLIENTCERT, CLIENTCERT-CIPHERS, CLIENTCERT-END, TLS-ALPN-PROTOCOL, TLS-SNI, TLS-JA3, and TLS-JA4.</p> <p>TLS-PORT, TLS-CIPHER, CLIENTCERT-SUBJECTDN, CLIENTCERT-ISSUERDN, CLIENTCERT-FINGERPRINT, CLIENTCERT-CLIENTVERIFY, CLIENTCERT-SERIALNUMBER, CLIENTCERT, CLIENTCERT-CIPHERS, CLIENTCERT-END, TLS-ALPN-PROTOCOL, TLS-SNI, TLS-JA3, and TLS-JA4 can only be specified for HTTPS and QUIC listeners.</p> <p><b>Range:</b> The value can contain 1 to 128 characters. ASCII codes 32 through 127 printable characters, asterisk (*), and question mark (?) are also supported. The value cannot start or end with a space. The following values are not allowed: connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, transparent, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-port, x-real-ip, x-forwarded-proto, x-forwarded-</p> |

| Parameter | Mandatory | Type | Description                                                                                                                |
|-----------|-----------|------|----------------------------------------------------------------------------------------------------------------------------|
|           |           |      | elb-ip, x-forwarded-elb-id, x-forwarded-elb-vip, x-nuwa-trace-ne-in, and x-nuwa-trace-ne-out.<br><b>Default value:</b> N/A |

Table 5-708 UpdateRemoveHeadersConfig

| Parameter | Mandatory | Type                                                      | Description                                                                                                                                 |
|-----------|-----------|-----------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| configs   | Yes       | Array of <a href="#">UpdateRemoveHeaderConfig</a> objects | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule.<br><b>Default value:</b> N/A |

**Table 5-709** UpdateRemoveHeaderConfig

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | <b>Definition:</b> Specifies the key of the header you want to remove from the request that matches the forwarding rule.<br><b>Constraints:</b> The following cannot be used as a key.<br>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out<br><b>Range:</b> The value can contain 1 to 40 characters, including letters (case-insensitive), digits, hyphens (-), and underscores (_).<br><b>Default value:</b> N/A |

**Table 5-710** UpdateTrafficLimitConfig

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                   |
|-----------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| qps       | No        | Integer | <b>Definition:</b> Specifies the maximum number of queries per second (QPS).<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 100000. Unit: count/s. <b>0</b> indicates that QPS is not limited.<br><b>Default value:</b> N/A |

| Parameter         | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| per_source_ip_qps | No        | Integer | <p><b>Definition:</b> Specifies the maximum number of queries per second (QPS) from a source IP address (single client).</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter is not available for QUIC listeners.</li><li>• The value can be <b>0</b> or <b>null</b>.</li><li>• If <b>qps</b> is not set to <b>0</b>, <b>per_source_ip_qps</b> must be specified a smaller value than <b>qps</b>.</li></ul> <p><b>Range:</b> 0 to 100000. Unit: count/s. <b>0</b> indicates that QPS is not limited.</p> <p><b>Default value:</b> N/A</p> |
| burst             | No        | Integer | <p><b>Definition:</b> Specifies the allowed burst queries if the number of queries exceeds the value specified for <b>qps</b>. If the number of burst queries exceeds the value specified for <b>burst</b>, 503 Service Unavailable will be returned to the client.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> 0 to 100000. Unit: count/s.</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                    |

**Table 5-711** CreateCorsConfig

| Parameter      | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| allow_origin   | No        | Array of strings | <b>Definition:</b> Specifies the origins that are allowed to access cross-origin resources through a browser. The origin can be a wildcard (*) or one or more URLs.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>Each URL must start with <b>http://</b> or <b>https://</b>, followed by a valid domain name or level-1 wildcard domain name, for example, <b>http://*.test.abc.example.com</b>.</li><li>It is optional to include a port number (ranging from 1 to 65535) in the URL.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| allow_methods  | No        | Array of strings | <b>Definition:</b> Specifies the HTTP methods that the specified URLs can use to access cross-origin resources.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                    |
| allow_headers  | No        | Array of strings | <b>Definition:</b> Specifies the request headers that can be carried in CORS requests.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                             |
| expose_headers | No        | Array of strings | <b>Definition:</b> Specifies the headers that can be exposed.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                      |



| Parameter         | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                    |
|-------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| allow_credentials | No        | Boolean | <b>Definition:</b> Specifies whether to allow credentials in CORS requests.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Credentials are allowed.</li><li>• <b>false:</b> Credentials are not allowed.</li></ul> <b>Default value:</b> N/A |
| max_age           | No        | Long    | <b>Definition:</b> Specifies the maximum duration a preflight request can be cached, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> -1 to 172800<br><b>Default value:</b> N/A                                                                                                         |

**Table 5-712** CreateTrafficMirrorConfig

| Parameter                  | Mandatory | Type             | Description                                                                                                                                                                 |
|----------------------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| target_ids                 | No        | Array of strings | <b>Definition:</b> Specifies the IDs of the backend server groups that traffic is mirrored to.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| mirror_request_body_enable | No        | Boolean          | Specifies whether to include the mirror request body. The default value is <b>true</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A       |

**Table 5-713** CreateRuleOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | <b>Definition:</b> Specifies the administrative status of the forwarding rule.<br><b>Constraints:</b> The value can only be <b>true</b> .<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| compare_type   | Yes       | String  | <b>Definition:</b> Specifies how requests are matched with the forwarding rule.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, the value can only be <b>EQUAL_TO</b>, and asterisks (*) can be used as wildcard characters.</li><li>• If <b>type</b> is set to <b>PATH</b>, the value can be <b>REGEX</b>, <b>STARTS_WITH</b>, or <b>EQUAL_TO</b>.</li><li>• If <b>type</b> is set to <b>METHOD</b> or <b>SOURCE_IP</b>, the value can only be <b>EQUAL_TO</b>.</li><li>• If <b>type</b> is set to <b>HEADER</b> or <b>QUERY_STRING</b>, the value can only be <b>EQUAL_TO</b>, asterisks (*) and question marks (?) can be used as wildcard characters.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: exact match</li><li>• <b>REGEX</b>: regular expression match</li><li>• <b>STARTS_WITH</b>: prefix match</li></ul> <b>Default value:</b> N/A |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                            |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | No        | String | <b>Definition:</b> Specifies the key of the match item. For example, if an HTTP header is used for matching, <b>key</b> is the name of the HTTP header parameter.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>This parameter is unsupported. Please do not use it. |

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value      | Yes       | String | <p><b>Definition:</b> Specifies the value of the match item. For example, if a domain name is used for matching, <b>value</b> is the domain name.</p> <p><b>Constraints:</b> This parameter takes effect only when <b>conditions</b> is left blank.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, the value can contain letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b> and <b>compare_type</b> to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&amp;\$. * +?,=!: \\() [] {}</li><li>• If <b>type</b> is set to <b>METHOD</b>, <b>SOURCE_IP</b>, <b>HEADER</b>, or <b>QUERY_STRING</b>, this parameter will not take effect, and <b>conditions</b> will be used to specify the key and value.</li></ul> <p><b>Default value:</b> N/A</p> |
| project_id | No        | String | <p><b>Definition:</b> Specifies the ID of the project where the forwarding rule is used.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type      | Yes       | String  | <p><b>Definition:</b> Specifies the forwarding rule type.</p> <p><b>Constraints:</b></p> <p>If <b>type</b> is set to <b>HOST_NAME</b>, <b>PATH</b>, <b>METHOD</b>, or <b>SOURCE_IP</b>, only one forwarding rule can be created for each type. If <b>type</b> is set to <b>HEADER</b> and <b>QUERY_STRING</b>, multiple forwarding rules can be created for each type.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>HOST_NAME:</b> A domain name will be used for matching.</li><li>• <b>PATH:</b> A URL will be used for matching.</li><li>• <b>METHOD:</b> A request method will be used for matching.</li><li>• <b>HEADER:</b> A request header will be used for matching.</li><li>• <b>QUERY_STRING:</b> A query string will be used for matching.</li><li>• <b>SOURCE_IP:</b> A source IP address will be used for matching.</li><li>• <b>COOKIE:</b> A cookie will be used for matching.</li></ul> <p><b>Default value:</b> N/A</p> |
| invert    | No        | Boolean | <p><b>Definition:</b> Specifies whether reverse matching is supported.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> true or false</p> <p><b>Default value:</b> false</p> <p>This parameter is unsupported. Please do not use it.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Parameter  | Mandatory | Type                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------|-----------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| conditions | No        | Array of <a href="#">CreateRuleCondition</a> objects | <p><b>Definition:</b> Specifies the conditions contained in a forwarding rule.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b>.</li><li>• If <b>conditions</b> is set for a forwarding rule, the values of <b>key</b> and <b>value</b> are ignored.</li><li>• All keys in the conditions of a rule must be the same, and the values must be unique.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

**Table 5-714** CreateRuleCondition

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | No        | String | <p><b>Definition:</b> Specifies the key of match item.</p> <p><b>Constraints:</b> All keys in the conditions list in the same rule must be the same.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>PATH</b>, <b>METHOD</b>, or <b>SOURCE_IP</b>, this parameter is an empty string.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the request and response header, and <b>value</b> indicates the value of the request and response header. Each key can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_).</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The key is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({ }), angle brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed.</li></ul> <p><b>Default value:</b> N/A</p> |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | Yes       | String | <p><b>Definition:</b> Specifies the value of the match item.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The key of each condition in a forwarding rule must be the same.</li><li>• The value of each condition in a forwarding rule must be unique.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>key</b> is always an empty string and <b>value</b> indicates the domain name. Each value can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b>, <b>key</b> is always an empty string and <b>value</b> indicates the request path, which can contain 1 to 128 characters. If <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b> for a forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&amp;\$. * +?,=!: \\()[]{}.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the HTTP header parameter, and <b>value</b> indicates the value of the request header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are</li></ul> |



| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------|-----------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match one character.</p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({ }), angle brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match one character.</li><li>• If <b>type</b> is set to <b>METHOD</b>, <b>key</b> is always an empty string and <b>value</b> indicates the HTTP method. The value can be <b>GET</b>, <b>PUT</b>, <b>POST</b>, <b>DELETE</b>, <b>PATCH</b>, <b>HEAD</b>, or <b>OPTIONS</b>.</li><li>• If <b>type</b> is set to <b>SOURCE_IP</b>, <b>key</b> is always an empty string and <b>value</b> indicates the source IP address of the request. The value is an IPv4 or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.</li></ul> <p><b>Default value:</b> N/A</p> |

## Response Parameters

Status code: 200

**Table 5-715** Response body parameters

| Parameter  | Type                   | Description                                                                                                                                                                          |
|------------|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                 | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| l7policy   | <b>L7Policy</b> object | <b>Definition:</b> Specifies the forwarding policy.                                                                                                                                  |

**Table 5-716** L7Policy

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| action         | String  | <b>Definition:</b> Specifies the action of the forwarding policy.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL:</b> Requests are forwarded to another backend server group.</li><li>• <b>REDIRECT_TO_LISTENER:</b> Requests are redirected to an HTTPS listener.</li><li>• <b>REDIRECT_TO_URL:</b> Requests are redirected to another URL.</li><li>• <b>FIXED_RESPONSE:</b> A fixed response body is returned.</li></ul> |
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the forwarding policy.<br><b>Range:</b> The value can only be <b>true</b> .                                                                                                                                                                                                                                                                                                                    |
| description    | String  | <b>Definition:</b> Provides supplementary information about the forwarding policy.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                  |
| id             | String  | <b>Definition:</b> Specifies the forwarding policy ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                              |

| Parameter            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                |
|----------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listener_id          | String  | <b>Definition:</b> Specifies the ID of the listener with which the forwarding policy is associated.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                   |
| name                 | String  | <b>Definition:</b> Specifies the forwarding policy name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                              |
| position             | Integer | <b>Definition:</b> Specifies the priority of the forwarding policy. The priority cannot be updated.<br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                |
| priority             | Integer | <b>Definition:</b> Specifies the priority of the forwarding policy. A smaller value indicates a higher priority.<br><b>Range:</b> <ul style="list-style-type: none"><li>• If <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, the priority ranges from 0 to 10,000.</li><li>• If <b>action</b> is set to other values, the priority ranges from 1 to 10,000.</li></ul> |
| project_id           | String  | <b>Definition:</b> Specifies the ID of the project where the forwarding policy is used.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                               |
| provisioning_status  | String  | <b>Definition:</b> Specifies the provisioning status of the forwarding policy.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ACTIVE</b> (default): The forwarding policy is provisioned successfully.</li><li>• <b>ERROR</b>: The forwarding policy has the same rule as another forwarding policy added to the same listener.</li></ul>                     |
| redirect_pool_id     | String  | <b>Definition:</b> Specifies the ID of the backend server group to which requests will be forwarded.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                  |
| redirect_listener_id | String  | <b>Definition:</b> Specifies the ID of the listener to which requests are redirected.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                 |

| Parameter                            | Type                                                    | Description                                                                                                                                                                                                                                                                                                                         |
|--------------------------------------|---------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_url                         | String                                                  | <b>Definition:</b> Specifies the URL to which requests will be forwarded.<br><b>Range:</b> The value must be in the format of <i>protocol://host:port/path?query</i> .<br>This parameter is unsupported. Please do not use it.                                                                                                      |
| rules                                | Array of <a href="#">RuleRef</a> objects                | <b>Definition:</b> Lists the forwarding rules in the forwarding policy.                                                                                                                                                                                                                                                             |
| redirect_url_config                  | <a href="#">RedirectUrlConfig</a> object                | <b>Definition:</b> Specifies the URL to which requests are forwarded.                                                                                                                                                                                                                                                               |
| redirect_pools_config                | Array of <a href="#">RedirectPoolsConfig</a> objects    | <b>Definition:</b> Specifies the backend server groups that the requests are forwarded to. This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b> . If this parameter is specified and <b>enhance_l7policy_enable</b> is set to <b>false</b> , an error will be returned.                       |
| redirect_pools_sticky_session_config | <a href="#">RedirectPoolsStickySessionConfig</a> object | <b>Definition:</b> Specifies whether to enable sticky session for backend server groups configured for a forwarding policy. The load balancer generates a cookie after it receives a request from a client. All subsequent requests with the same cookie are routed to the same backend server group.                               |
| redirect_pools_extend_config         | <a href="#">RedirectPoolsExtendConfig</a> object        | <b>Definition:</b> Specifies the backend server group that requests are forwarded to.                                                                                                                                                                                                                                               |
| fixed_response_config                | <a href="#">FixedResponseConfig</a> object              | <b>Definition:</b> Specifies the configuration of the page that will be returned.                                                                                                                                                                                                                                                   |
| created_at                           | String                                                  | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                                                                           |
|-----------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at            | String | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br><br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| enterprise_project_id | String | <b>Definition:</b> Specifies the enterprise project ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                          |

**Table 5-717** RuleRef

| Parameter | Type   | Description                                                               |
|-----------|--------|---------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the forwarding rule ID.<br><b>Range:</b> N/A |

**Table 5-718** RedirectUrlConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                |
|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol  | String | <b>Definition:</b> Specifies the protocol for redirection.<br><b>Range:</b> <ul style="list-style-type: none"><li>• HTTP</li><li>• HTTPS</li><li>• <b>\${protocol}</b>: indicates that the protocol in the request will be used.</li></ul> |
| host      | String | <b>Definition:</b> Specifies the name of the host that requests are redirected to.<br><b>Range:</b> The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit.                        |
| port      | String | <b>Definition:</b> Specifies the port that requests are redirected to.<br><b>Range:</b> N/A                                                                                                                                                |

| Parameter             | Type                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| path                  | String                            | <b>Definition:</b> Specifies the path that requests are redirected to.<br><b>Range:</b> The value can contain only letters, digits, and special characters: <code>_~';@^-%#&amp;\$.*+?;=!: \\V()[]{} </code> and must start with a slash (/).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| query                 | String                            | <b>Definition:</b> Specifies the query string set in the URL for redirection. The following is an example:<br>In the URL <b>https://www.example.com:8080/elb?type=loadbalancer</b> , if this parameter is set to <b>`\${query}&amp;name=my_name`</b> , the URL will be redirected to <b>https://www.example.com:8080/elb?type=loadbalancer&amp;name=my_name</b> . In the example, <b>`\${query}`</b> indicates <b>type=loadbalancer</b> .<br><b>Range:</b> The value can contain only letters, digits, and the special characters: <code>!\$&amp;'()*+,-./:;=?@^_` </code> . The letters are case-sensitive. <code>\$1</code> , <code>\$2</code> , <code>\$3</code> , and all the way to <code>\$9</code> match the wildcard asterisk (*) in the requested URL. |
| status_code           | String                            | <b>Definition:</b> Specifies the status code returned after the requests are redirected.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 301</li><li>• 302</li><li>• 303</li><li>• 307</li><li>• 308</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| insert_headers_config | <b>InsertHeadersConfig</b> object | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| remove_headers_config | <b>RemoveHeadersConfig</b> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

**Table 5-719** RedirectPoolsConfig

| Parameter | Type    | Description                                                                                                                                                                                                                                                                                                                                          |
|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pool_id   | String  | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                       |
| weight    | Integer | <b>Definition:</b> Specifies the weight of the backend server group. Requests are routed to backend server groups based on their weights. The larger the weight is, the higher proportion of requests the backend server group receives. If the weight is set to 0, the backend server group will not accept new requests.<br><b>Range:</b> 0 to 100 |

**Table 5-720** RedirectPoolsStickySessionConfig

| Parameter | Type    | Description                                                                                                                                                                                                    |
|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable sticky session for backend server groups configured in a forwarding policy.<br><b>Default value:</b> <b>false</b> , indicating that sticky session is disabled. |
| timeout   | Integer | <b>Definition:</b> Specifies the stickiness duration, in minutes.<br><b>Range:</b> 1 to 1440                                                                                                                   |

**Table 5-721** RedirectPoolsExtendConfig

| Parameter          | Type                           | Description                                                                                                                                                                                      |
|--------------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rewrite_url_enable | Boolean                        | <b>Definition:</b> Specifies whether to set <b>rewrite_url_enable</b> to <b>true</b> .<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option). |
| rewrite_url_config | <b>RewriteUrlConfig</b> object | <b>Definition:</b> Specifies the URL for the backend server group that requests are forwarded to.                                                                                                |

| Parameter             | Type                                       | Description                                                                                                    |
|-----------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| insert_headers_config | <a href="#">InsertHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.  |
| remove_headers_config | <a href="#">RemoveHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule. |
| traffic_limit_config  | <a href="#">TrafficLimitConfig</a> object  | <b>Definition:</b> Specifies how requests are limited.                                                         |
| cors_config           | <a href="#">CorsConfig</a> object          | <b>Definition:</b> Specifies the CORS configurations.                                                          |
| traffic_mirror_config | <a href="#">TrafficMirrorConfig</a> object | <b>Definition:</b> Specifies the traffic mirroring configuration.                                              |

**Table 5-722** RewriteUrlConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| host      | String | <b>Definition:</b> Specifies the domain name of the host that requests are redirected to.<br><br><b>Range:</b> The value can contain letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| path      | String | <b>Definition:</b> Specifies the path that requests are redirected to. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL. If the number of regular expression match groups is less than the specified number, <b>\${path}</b> is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, <b>\$abc#123</b> , and the matching result is <b>#123</b> . If the dollar sign (\$) is followed by a special character, for example, <b>\$#</b> , the matching result is <b>\$#</b> .<br><br><b>Range:</b> The value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&\$.+?,:! /() |



| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| query     | String | <b>Definition:</b> Specifies the query string set in the URL for redirection. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL. If the number of regular expression match groups is less than the specified number, <b>\${path}</b> is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, <b>\$abc#123</b> , and the matching result is <b>#123</b> . If the dollar sign (\$) is followed by a special character, for example, <b>\$#</b> , the matching result is <b>\$#</b> .<br><b>Range:</b> The value can contain only letters, digits, and the special characters: !\$&'()+,-./:;=?@^_`. The letters are case-sensitive. |

**Table 5-723** CorsConfig

| Parameter     | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| allow_origin  | Array of strings | <b>Definition:</b> Specifies the origins that are allowed to access cross-origin resources through a browser. The origin can be a wildcard (*) or one or more URLs.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>Each URL must start with <b>http://</b> or <b>https://</b>, followed by a valid domain name or level-1 wildcard domain name, for example, <b>http://*.test.abc.example.com</b>.</li><li>It is optional to include a port number (ranging from 1 to 65535) in the URL.</li></ul> |
| allow_methods | Array of strings | <b>Definition:</b> Specifies the HTTP methods that the specified URLs can use to access cross-origin resources.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                             |
| allow_headers | Array of strings | <b>Definition:</b> Specifies the request headers that can be carried in CORS requests.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                      |

| Parameter         | Type             | Description                                                                                                                                                                                                                               |
|-------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| expose_headers    | Array of strings | <b>Definition:</b> Specifies the headers that can be exposed.<br><b>Range:</b> N/A                                                                                                                                                        |
| allow_credentials | Boolean          | <b>Definition:</b> Specifies whether to allow credentials in CORS requests.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Credentials are allowed.</li><li>• <b>false:</b> Credentials are not allowed.</li></ul> |
| max_age           | Long             | <b>Definition:</b> Specifies the maximum duration a preflight request can be cached, in seconds.<br><b>Range:</b> -1 to 172800                                                                                                            |

**Table 5-724** TrafficMirrorConfig

| Parameter                  | Type             | Description                                                                                                         |
|----------------------------|------------------|---------------------------------------------------------------------------------------------------------------------|
| target_ids                 | Array of strings | <b>Definition:</b> Specifies the IDs of the backend server groups that traffic is mirrored to.<br><b>Range:</b> N/A |
| mirror_request_body_enable | Boolean          | Specifies whether to include the mirror request body. The default value is <b>true</b> .<br><b>Range:</b> N/A       |

**Table 5-725** FixedResponseConfig

| Parameter    | Type   | Description                                                                                                                                                                                                                                    |
|--------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| status_code  | String | <b>Definition:</b> Specifies the HTTP status code.<br><b>Range:</b> 200-299, 400-499, 500-599                                                                                                                                                  |
| content_type | String | <b>Definition:</b> Specifies the format of the returned body.<br><b>Range:</b> <ul style="list-style-type: none"><li>• text/plain</li><li>• text/css</li><li>• text/html</li><li>• application/javascript</li><li>• application/json</li></ul> |

| Parameter             | Type                                       | Description                                                                                                    |
|-----------------------|--------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| message_body          | String                                     | <b>Definition:</b> Specifies the content of the response message body.<br><b>Range:</b> N/A                    |
| insert_headers_config | <a href="#">InsertHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to write into the request that matches the forwarding rule.  |
| remove_headers_config | <a href="#">RemoveHeadersConfig</a> object | <b>Definition:</b> Specifies the headers you want to remove from the request that matches the forwarding rule. |
| traffic_limit_config  | <a href="#">TrafficLimitConfig</a> object  | <b>Definition:</b> Specifies how requests are limited.                                                         |

**Table 5-726** InsertHeadersConfig

| Parameter | Type                                                | Description                                                                                               |
|-----------|-----------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| configs   | Array of <a href="#">InsertHeaderConfig</a> objects | <b>Definition:</b> Specifies the request and response headers you want to add.<br><b>Constraints:</b> N/A |

**Table 5-727** InsertHeaderConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <b>Definition:</b> Specifies the key of the request and response headers.<br><b>Constraints:</b> The following cannot be used as a key.<br>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out<br><b>Range:</b> The value can contain 1 to 40 characters, including letters (case-insensitive), digits, hyphens (-), and underscores (_). |

| Parameter  | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value_type | String | <b>Definition:</b> Specifies the value type of the request and response headers.<br><b>Range:</b> <b>USER_DEFINED</b> , <b>REFERENCE_HEADER</b> , or <b>SYSTEM_DEFINED</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| value      | String | <b>Definition:</b> Specifies the value of the request and response headers.<br><b>Range:</b> The value can contain 1 to 128 characters. ASCII codes 32 through 127 printable characters, asterisks (*), and question marks (?) are also supported. The value cannot start or end with a space and cannot be any of the following: connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, transparent, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-port, x-real-ip, x-forwarded-proto, x-forwarded-elb-ip, x-forwarded-elb-id, x-forwarded-elb-vip, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out. |

**Table 5-728** RemoveHeadersConfig

| Parameter | Type                                                | Description                                                                                                  |
|-----------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| configs   | Array of <a href="#">RemoveHeaderConfig</a> objects | <b>Definition:</b> Specifies the request and response headers you want to remove.<br><b>Constraints:</b> N/A |

**Table 5-729** RemoveHeaderConfig

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <p><b>Definition:</b> Specifies the key of the request and response headers you want to remove.</p> <p><b>Constraints:</b> The following cannot be used as a key.</p> <p>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out</p> <p><b>Range:</b> The value can contain 1 to 40 characters, including letters (case-insensitive), digits, hyphens (-), and underscores (_).</p> |

**Table 5-730** TrafficLimitConfig

| Parameter         | Type    | Description                                                                                                                                                                                                                                                                                                              |
|-------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| qps               | Integer | <p><b>Definition:</b> Specifies the maximum number of queries per second (QPS).</p> <p><b>Range:</b> 0 to 100000. Unit: count/s. <b>0</b> indicates that QPS is not limited.</p>                                                                                                                                         |
| per_source_ip_qps | Integer | <p><b>Definition:</b> Specifies the maximum number of queries per second (QPS) from a source IP address (single client).</p> <p><b>Range:</b> 0 to 100000. Unit: count/s. <b>0</b> indicates that QPS is not limited.</p>                                                                                                |
| burst             | Integer | <p><b>Definition:</b> Specifies the allowed burst queries if the number of queries exceeds the value specified for <b>qps</b>. If the number of burst queries exceeds the value specified for <b>burst</b>, 503 Service Unavailable will be returned to the client.</p> <p><b>Range:</b> 0 to 100000. Unit: count/s.</p> |

## Example Requests

### Modifying a forwarding policy

PUT [https://{ELB\\_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/l7policies/cf4360fd-8631-41ff-a6f5-b72c35da74be](https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/l7policies/cf4360fd-8631-41ff-a6f5-b72c35da74be)

```
{
 "l7policy": {
 "name": "My policy.",
 "description": "Update policy.",
 "redirect_listener_id": "48a97732-449e-4aab-b561-828d29e45050"
 }
}
```

## Example Responses

### Status code: 200

Successful request.

```
{
 "l7policy": {
 "name": "my policy",
 "redirect_pool_id": null,
 "description": "",
 "admin_state_up": true,
 "rules": [{
 "id": "a8310d08-6d4c-413a-aa45-7e43f8183193"
 }],
 "project_id": "0c1503d710984bad92306faea3654dfd",
 "listener_id": "8b9d7d2c-49dc-43ba-99f5-3bc476bdf10b",
 "redirect_url": null,
 "redirect_url_config": null,
 "redirect_pools_config": [{
 "weight": 100,
 "pool_id": "599fdd99-d908-4dff-9db3-15eec274dfed"
 }],
 "redirect_pools_sticky_session_config": {
 "enable": false,
 "timeout": 1000
 },
 "fixed_response_config": null,
 "redirect_listener_id": null,
 "action": "REDIRECT_TO_POOL",
 "position": 100,
 "priority": 1,
 "provisioning_status": "ACTIVE",
 "id": "10ebd807-54b1-4f73-a21e-4e7af939d13b",
 "enterprise_project_id": "0",
 "created_at": "2025-04-15T08:36:43Z",
 "updated_at": "2025-04-15T11:49:56Z",
 "redirect_pools_extend_config": {
 "rewrite_url_enable": false,
 "rewrite_url_config": null,
 "insert_headers_config": {
 "configs": [{
 "key": "test",
 "value": "xxx",
 "value_type": "USER_DEFINED"
 }]
 },
 "remove_headers_config": {
 "configs": [{
 "key": "req-trace-id"
 }]
 }
 },
 "traffic_limit_config": null,
 }
}
```

```
"cors_config" : null,
"traffic_mirror_config" : null
},
},
"request_id" : "54961722be349499068aa73a5f91745a"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

#### Modifying a forwarding policy

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class UpdateL7PolicySolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR_REGION>"))
 .build();

 UpdateL7PolicyRequest request = new UpdateL7PolicyRequest();
 request.withL7policyId("{l7policy_id}");
 UpdateL7PolicyRequestBody body = new UpdateL7PolicyRequestBody();
 UpdateL7PolicyOption l7policybody = new UpdateL7PolicyOption();
 l7policybody.withDescription("Update policy.")
 .withName("My policy.")
 .withRedirectListenerId("48a97732-449e-4aab-b561-828d29e45050");
 body.withL7policy(l7policybody);
 request.withBody(body);
 try {
 UpdateL7PolicyResponse response = client.updateL7Policy(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 }
 }
}
```

```
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

## Python

### Modifying a forwarding policy

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = UpdateL7PolicyRequest()
 request.l7policy_id = "{l7policy_id}"
 l7policybody = UpdateL7PolicyOption(
 description="Update policy.",
 name="My policy.",
 redirect_listener_id="48a97732-449e-4aab-b561-828d29e45050"
)
 request.body = UpdateL7PolicyRequestBody(
 l7policy=l7policybody
)
 response = client.update_l7_policy(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Modifying a forwarding policy

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)
```



```
func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbcClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.UpdateL7PolicyRequest{}
 request.L7policyId = "{l7policy_id}"
 descriptionL7policy:= "Update policy."
 nameL7policy:= "My policy."
 redirectListenerIdL7policy:= "48a97732-449e-4aab-b561-828d29e45050"
 l7policybody := &model.UpdateL7PolicyOption{
 Description: &descriptionL7policy,
 Name: &nameL7policy,
 RedirectListenerId: &redirectListenerIdL7policy,
 }
 request.Body = &model.UpdateL7PolicyRequestBody{
 L7policy: l7policybody,
 }
 response, err := client.UpdateL7Policy(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.14.5 Deleting a Forwarding Policy

### Function

This API is used to delete a forwarding policy.

### Calling Method

For details, see [Calling APIs](#).

### URI

DELETE /v3/{project\_id}/elb/l7policies/{l7policy\_id}

**Table 5-731** Path Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id  | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| l7policy_id | Yes       | String | <b>Definition:</b> Specifies the forwarding policy ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                        |

### Request Parameters

**Table 5-732** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 204**

Successful request.

None

## Example Requests

Deleting a given forwarding policy

```
DELETE https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/l7policies/cf4360fd-8631-41ff-a6f5-b72c35da74be
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeleteL7PolicySolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 DeleteL7PolicyRequest request = new DeleteL7PolicyRequest();
 request.withL7policyId("{l7policy_id}");
 try {
 DeleteL7PolicyResponse response = client.deleteL7Policy(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
```

```
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeleteL7PolicyRequest()
 request.l7policy_id = "{l7policy_id}"
 response = client.delete_l7_policy(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
```

```
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.DeleteL7PolicyRequest{}
request.L7policyId = "{l7policy_id}"
response, err := client.DeleteL7Policy(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.14.6 Batch Modifying Forwarding Policy Priorities

### Function

This API is used to batch modify the priorities of forwarding policies.

### Constraints

This API is only used to update the priorities of forwarding policies added to a listener of a dedicated load balancer when **action** is set to **REDIRECT\_TO\_POOL**.

### Calling Method

For details, see [Calling APIs](#).

## URI

POST /v3/{project\_id}/elb/l7policies/batch-update-priority

**Table 5-733** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-734** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-735** Request body parameters

| Parameter  | Mandatory | Type                                                            | Description                                                                                                                                   |
|------------|-----------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| l7policies | No        | Array of <a href="#">BatchUpdatePriorityRequestBody</a> objects | <b>Definition:</b> Specifies the request parameters for updating the priorities of forwarding policies in batches.<br><b>Constraints:</b> N/A |

Table 5-736 BatchUpdatePriorityRequestBody

| Parameter | Mandatory | Type   | Description                                                                                                                                              |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | Yes       | String | <b>Definition:</b> Specifies the ID of the forwarding policy to be updated.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| priority  | Yes       | Integer | <p><b>Definition:</b> Specifies the priority of the forwarding policy. A smaller value indicates a higher priority.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The priority must be unique for forwarding policies of the same listener.</li><li>• This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b>. If this parameter is passed and <b>enhance_l7policy_enable</b> is set to <b>false</b>, an error will be returned.</li><li>• If <b>enhance_l7policy_enable</b> is set to <b>false</b>, forwarding policies are automatically prioritized based on the original policy sorting logic. The priorities of domain names are independent from each other. For the same domain name, the priorities are sorted in the order of exact match (<b>EQUAL_TO</b>), prefix match (<b>STARTS_WITH</b>), and regular expression match (<b>REGEX</b>). If the matching types are the same, the longer the path is, the higher the priority is. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default.</li><li>• This parameter is unsupported for shared load balancers.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, the priority ranges from 0 to 10,000.</li></ul> |



| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------|-----------|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <ul style="list-style-type: none"><li>• If <b>action</b> is set to other values, the priority ranges from 1 to 10,000.</li></ul> <p><b>Default value:</b></p> <ul style="list-style-type: none"><li>• If this parameter is not passed and <b>enhance_l7policy_enable</b> is set to <b>false</b>, the priority of the new forwarding policy is 1.</li><li>• If <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, the priority of the new forwarding policy is <b>0</b>.</li><li>• If <b>action</b> is set to other values, the priority of the new forwarding policy will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default.<ul style="list-style-type: none"><li>– If there is no forwarding policy, the priority of a new forwarding policy will be 1 by default.</li><li>– If the priority of an existing forwarding policy is the maximum value (10,000), the forwarding policy will fail to be created because the maximum value will be exceeded. In this case, specify a value or adjust the priorities of existing forwarding policies.</li></ul></li></ul> |

## Response Parameters

Status code: 202

**Table 5-737** Response body parameters

| Parameter  | Type   | Description                                                             |
|------------|--------|-------------------------------------------------------------------------|
| request_id | String | <b>Definition:</b> Specifies the request ID.<br><b>Constraints:</b> N/A |

## Example Requests

Batch modifying the priorities of forwarding policies

```
POST https://{ELB_Endpoint}/v3/060576782980d5762f9ec014dd2f1148/elb/l7policies/batch-update-priority
{
 "l7policies" : [{
 "id" : "1fe93e12-6e07-47a9-8f81-3346c015601d",
 "priority" : 11
 }]
}
```

## Example Responses

**Status code: 202**

Created

```
{
 "request_id" : "e5c07525-1470-47b6-9b0c-567527a036aa"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Batch modifying the priorities of forwarding policies

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class BatchUpdatePoliciesPrioritySolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
```

```
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
BatchUpdatePoliciesPriorityRequest request = new BatchUpdatePoliciesPriorityRequest();
BatchUpdatePoliciesPriorityRequestBody body = new BatchUpdatePoliciesPriorityRequestBody();
List<BatchUpdatePriorityRequestBody> listbodyL7policies = new ArrayList<>();
listbodyL7policies.add(
 new BatchUpdatePriorityRequestBody()
 .withId("1fe93e12-6e07-47a9-8f81-3346c015601d")
 .withPriority(11)
);
body.withL7policies(listbodyL7policies);
request.withBody(body);
try {
 BatchUpdatePoliciesPriorityResponse response = client.batchUpdatePoliciesPriority(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

### Batch modifying the priorities of forwarding policies

# coding: utf-8

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *
```

```
if __name__ == "__main__":
```

    # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.

    # In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD\_SDK\_AK and CLOUD\_SDK\_SK in the local environment

```
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"
```

```
 credentials = BasicCredentials(ak, sk, projectId)
```

```
 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()
```

```
 try:
```

```
request = BatchUpdatePoliciesPriorityRequest()
listL7policiesbody = [
 BatchUpdatePriorityRequestBody(
 id="1fe93e12-6e07-47a9-8f81-3346c015601d",
 priority=11
)
]
request.body = BatchUpdatePoliciesPriorityRequestBody(
 l7policies=listL7policiesbody
)
response = client.batch_update_policies_priority(request)
print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Batch modifying the priorities of forwarding policies

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.BatchUpdatePoliciesPriorityRequest{}
 var listL7policiesbody = []model.BatchUpdatePriorityRequestBody{
 {
 Id: "1fe93e12-6e07-47a9-8f81-3346c015601d",
 Priority: int32(11),
 },
 }
 request.Body = &model.BatchUpdatePoliciesPriorityRequestBody{
 L7policies: &listL7policiesbody,
 }
 response, err := client.BatchUpdatePoliciesPriority(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

```
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description |
|-------------|-------------|
| 202         | Created     |

## Error Codes

See [Error Codes](#).

# 5.15 Forwarding Rule

## 5.15.1 Adding a Forwarding Rule

### Function

This API is used to add a forwarding rule.

### Constraints

The forwarding rule cannot be created when **action** is set to **REDIRECT\_TO\_LISTENER**.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/l7policies/{l7policy\_id}/rules

**Table 5-738** Path Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| l7policy_id | Yes       | String | <b>Definition:</b> Specifies the forwarding policy ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                        |
| project_id  | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-739** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-740** Request body parameters

| Parameter | Mandatory | Type                                    | Description                                                                  |
|-----------|-----------|-----------------------------------------|------------------------------------------------------------------------------|
| rule      | Yes       | <a href="#">CreateRuleOption</a> object | <b>Definition:</b> Specifies the forwarding rule.<br><b>Constraints:</b> N/A |

**Table 5-741** CreateRuleOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | <b>Definition:</b> Specifies the administrative status of the forwarding rule.<br><b>Constraints:</b> The value can only be <b>true</b> .<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| compare_type   | Yes       | String  | <b>Definition:</b> Specifies how requests are matched with the forwarding rule.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, the value can only be <b>EQUAL_TO</b>, and asterisks (*) can be used as wildcard characters.</li><li>• If <b>type</b> is set to <b>PATH</b>, the value can be <b>REGEX</b>, <b>STARTS_WITH</b>, or <b>EQUAL_TO</b>.</li><li>• If <b>type</b> is set to <b>METHOD</b> or <b>SOURCE_IP</b>, the value can only be <b>EQUAL_TO</b>.</li><li>• If <b>type</b> is set to <b>HEADER</b> or <b>QUERY_STRING</b>, the value can only be <b>EQUAL_TO</b>, asterisks (*) and question marks (?) can be used as wildcard characters.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: exact match</li><li>• <b>REGEX</b>: regular expression match</li><li>• <b>STARTS_WITH</b>: prefix match</li></ul> <b>Default value:</b> N/A |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                   |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | No        | String | <p><b>Definition:</b> Specifies the key of the match item. For example, if an HTTP header is used for matching, <b>key</b> is the name of the HTTP header parameter.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> <p>This parameter is unsupported. Please do not use it.</p> |



| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value      | Yes       | String | <p><b>Definition:</b> Specifies the value of the match item. For example, if a domain name is used for matching, <b>value</b> is the domain name.</p> <p><b>Constraints:</b> This parameter takes effect only when <b>conditions</b> is left blank.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, the value can contain letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b> and <b>compare_type</b> to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&amp;\$. * +?,=!: \\( ) [ ] { }</li><li>• If <b>type</b> is set to <b>METHOD</b>, <b>SOURCE_IP</b>, <b>HEADER</b>, or <b>QUERY_STRING</b>, this parameter will not take effect, and <b>conditions</b> will be used to specify the key and value.</li></ul> <p><b>Default value:</b> N/A</p> |
| project_id | No        | String | <p><b>Definition:</b> Specifies the ID of the project where the forwarding rule is used.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type      | Yes       | String  | <p><b>Definition:</b> Specifies the forwarding rule type.</p> <p><b>Constraints:</b></p> <p>If <b>type</b> is set to <b>HOST_NAME</b>, <b>PATH</b>, <b>METHOD</b>, or <b>SOURCE_IP</b>, only one forwarding rule can be created for each type. If <b>type</b> is set to <b>HEADER</b> and <b>QUERY_STRING</b>, multiple forwarding rules can be created for each type.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>HOST_NAME:</b> A domain name will be used for matching.</li><li>• <b>PATH:</b> A URL will be used for matching.</li><li>• <b>METHOD:</b> A request method will be used for matching.</li><li>• <b>HEADER:</b> A request header will be used for matching.</li><li>• <b>QUERY_STRING:</b> A query string will be used for matching.</li><li>• <b>SOURCE_IP:</b> A source IP address will be used for matching.</li><li>• <b>COOKIE:</b> A cookie will be used for matching.</li></ul> <p><b>Default value:</b> N/A</p> |
| invert    | No        | Boolean | <p><b>Definition:</b> Specifies whether reverse matching is supported.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> true or false</p> <p><b>Default value:</b> false</p> <p>This parameter is unsupported. Please do not use it.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Parameter  | Mandatory | Type                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------|-----------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| conditions | No        | Array of <a href="#">CreateRuleCondition</a> objects | <p><b>Definition:</b> Specifies the conditions contained in a forwarding rule.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b>.</li><li>• If <b>conditions</b> is set for a forwarding rule, the values of <b>key</b> and <b>value</b> are ignored.</li><li>• All keys in the conditions of a rule must be the same, and the values must be unique.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

**Table 5-742** CreateRuleCondition

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | No        | String | <p><b>Definition:</b> Specifies the key of match item.</p> <p><b>Constraints:</b> All keys in the conditions list in the same rule must be the same.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>PATH</b>, <b>METHOD</b>, or <b>SOURCE_IP</b>, this parameter is an empty string.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the request and response header, and <b>value</b> indicates the value of the request and response header. Each key can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_).</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The key is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({ }), angle brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed.</li></ul> <p><b>Default value:</b> N/A</p> |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | Yes       | String | <p><b>Definition:</b> Specifies the value of the match item.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The key of each condition in a forwarding rule must be the same.</li><li>• The value of each condition in a forwarding rule must be unique.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>key</b> is always an empty string and <b>value</b> indicates the domain name. Each value can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b>, <b>key</b> is always an empty string and <b>value</b> indicates the request path, which can contain 1 to 128 characters. If <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b> for a forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&amp;\$.*+? ,=!: \\V()[]{}.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the HTTP header parameter, and <b>value</b> indicates the value of the request header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are</li></ul> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------|-----------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match one character.</p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({ }), angle brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match one character.</li><li>• If <b>type</b> is set to <b>METHOD</b>, <b>key</b> is always an empty string and <b>value</b> indicates the HTTP method. The value can be <b>GET</b>, <b>PUT</b>, <b>POST</b>, <b>DELETE</b>, <b>PATCH</b>, <b>HEAD</b>, or <b>OPTIONS</b>.</li><li>• If <b>type</b> is set to <b>SOURCE_IP</b>, <b>key</b> is always an empty string and <b>value</b> indicates the source IP address of the request. The value is an IPv4 or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.</li></ul> <p><b>Default value:</b> N/A</p> |

## Response Parameters

Status code: 201

**Table 5-743** Response body parameters

| Parameter  | Type                 | Description                                                                                                                                                                          |
|------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String               | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| rule       | <b>L7Rule</b> object | <b>Definition:</b> Specifies the forwarding rule.                                                                                                                                    |

**Table 5-744** L7Rule

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                       |
|----------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the forwarding rule.<br><b>Range:</b> The value can only be <b>true</b> .<br>This parameter is unsupported. Please do not use it.                                                                                                                       |
| compare_type   | String  | <b>Definition:</b> Specifies how requests are matched with the forwarding rule.<br><b>Range:</b> If <b>type</b> is set to <b>HOST_NAME</b> , this parameter can only be set to <b>EQUAL_TO</b> . If <b>type</b> is set to <b>PATH</b> , the value can be <b>REGEX</b> , <b>STARTS_WITH</b> , or <b>EQUAL_TO</b> . |
| key            | String  | <b>Definition:</b> Specifies the key of the match content.<br><b>Range:</b> N/A                                                                                                                                                                                                                                   |
| project_id     | String  | <b>Definition:</b> Specifies the ID of the project where the forwarding rule is used.<br><b>Range:</b> N/A                                                                                                                                                                                                        |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type      | String | <p><b>Definition:</b> Specifies the forwarding rule type.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>HOST_NAME:</b> A domain name will be used for matching.</li><li>• <b>PATH:</b> A URL will be used for matching.</li><li>• <b>METHOD:</b> A request method will be used for matching.</li><li>• <b>HEADER:</b> A request header will be used for matching.</li><li>• <b>QUERY_STRING:</b> A query string will be used for matching.</li><li>• <b>SOURCE_IP:</b> A source IP address will be used for matching.</li><li>• <b>COOKIE:</b> A cookie will be used for matching.</li></ul>                                                                                                                                                                                                                                                                                                               |
| value     | String | <p><b>Definition:</b> Specifies the value of the match item.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, the value can contain letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b> and <b>compare_type</b> to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters: <code>_~'!;@^-%#&amp;\$. *+?,= :\ /() []{} </code></li><li>• If <b>type</b> is set to <b>METHOD</b>, <b>SOURCE_IP</b>, <b>HEADER</b>, or <b>QUERY_STRING</b>, this parameter will not take effect, and <b>conditions</b> will be used to specify the key and value.</li></ul> |



| Parameter           | Type                                           | Description                                                                                                                                                                                                                                                                                                                             |
|---------------------|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | String                                         | <b>Definition:</b> Specifies the provisioning status of the forwarding rule. This parameter is invalid. The default value is <b>ACTIVE</b> .<br><b>Range:</b> <b>ACTIVE</b> , <b>PENDING_CREATE</b> , or <b>ERROR</b> .                                                                                                                 |
| invert              | Boolean                                        | <b>Definition:</b> Specifies whether reverse matching is supported.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                |
| id                  | String                                         | <b>Definition:</b> Specifies the forwarding rule ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                               |
| conditions          | Array of <a href="#">RuleCondition</a> objects | <b>Definition:</b> Specifies the conditions contained in a forwarding rule.<br><b>Range:</b> N/A                                                                                                                                                                                                                                        |
| created_at          | String                                         | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br><br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| updated_at          | String                                         | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br><br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.   |

**Table 5-745** RuleCondition

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <p><b>Definition:</b> Specifies the key of match item.</p> <p><b>Constraints:</b> All keys in the conditions list in the same rule must be the same.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>PATH</b>, <b>METHOD</b>, or <b>SOURCE_IP</b>, this parameter is an empty string.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the request and response header, and <b>value</b> indicates the value of the request and response header. Each key can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_).</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The key is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({ }), angle brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed.</li></ul> <p><b>Default value:</b> N/A</p> |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | String | <p><b>Definition:</b> Specifies the value of the match item.</p> <p><b>Constraints:</b> The value of each condition in a forwarding rule must be unique.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>key</b> is always an empty string and <b>value</b> indicates the domain name. Each value can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b>, <b>key</b> is always an empty string and <b>value</b> indicates the request path, which can contain 1 to 128 characters. If <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b> for a forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&amp;\$.*+?,:!\ /()[]{}.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the HTTP header parameter, and <b>value</b> indicates the value of the request header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match one character.</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({}), angle</li></ul> |

| Parameter | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |      | <p>brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match one character.</p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>METHOD</b>, <b>key</b> is always an empty string and <b>value</b> indicates the HTTP method. The value can be <b>GET</b>, <b>PUT</b>, <b>POST</b>, <b>DELETE</b>, <b>PATCH</b>, <b>HEAD</b>, or <b>OPTIONS</b>.</li><li>• If <b>type</b> is set to <b>SOURCE_IP</b>, <b>key</b> is always an empty string and <b>value</b> indicates the source IP address of the request. The value is an IPv4 or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.</li></ul> <p><b>Default value:</b> N/A</p> |

## Example Requests

Creating a forwarding rule and setting **type** to **PATH**

POST https://{ELB\_Endpoint}/v3/{99a3fff0d03c428eac3678da6a7d0f24}/elb/l7policies/cf4360fd-8631-41ff-a6f5-b72c35da74be/rules

```
{
 "rule": {
 "compare_type": "EQUAL_TO",
 "type": "PATH",
 "value": "/bbb.html"
 }
}
```

## Example Responses

**Status code: 201**

Successful request.

```
{
 "rule": {
 "compare_type": "EQUAL_TO",
 "provisioning_status": "ACTIVE",
 "project_id": "99a3fff0d03c428eac3678da6a7d0f24",
 "invert": false,
 "admin_state_up": true,
 "value": "/bbb.html",
 "key": null,
 }
}
```

```
"type" : "PATH",
"id" : "84f4fcae-9c15-4e19-a99f-72c0b08fd3d7"
},
"request_id" : "3639f1b7-f04b-496e-9218-ec5a9e493f69"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

#### Creating a forwarding rule and setting **type** to **PATH**

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CreateL7RuleSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 CreateL7RuleRequest request = new CreateL7RuleRequest();
 request.withL7policyId("{l7policy_id}");
 CreateL7RuleRequestBody body = new CreateL7RuleRequestBody();
 CreateRuleOption rulebody = new CreateRuleOption();
 rulebody.withCompareType("EQUAL_TO")
 .withValue("/bbb.html")
 .withType("PATH");
 body.withRule(rulebody);
 request.withBody(body);
 try {
 CreateL7RuleResponse response = client.createL7Rule(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 }
 }
}
```

```
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

## Python

### Creating a forwarding rule and setting **type** to **PATH**

```
coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateL7RuleRequest()
 request.l7policy_id = "{l7policy_id}"
 rulebody = CreateRuleOption(
 compare_type="EQUAL_TO",
 value="/bbb.html",
 type="PATH"
)
 request.body = CreateL7RuleRequestBody(
 rule=rulebody
)
 response = client.create_l7_rule(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Creating a forwarding rule and setting **type** to **PATH**

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)
```

```
func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbcClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.CreateL7RuleRequest{}
 request.L7policyId = "{l7policy_id}"
 rulebody := &model.CreateRuleOption{
 CompareType: "EQUAL_TO",
 Value: "/bbb.html",
 Type: "PATH",
 }
 request.Body = &model.CreateL7RuleRequestBody{
 Rule: rulebody,
 }
 response, err := client.CreateL7Rule(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 201         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.15.2 Querying Forwarding Rules

### Function

This API is used to query all forwarding rules.

## Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query.
- Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

## Calling Method

For details, see [Calling APIs](#).

## URI

GET /v3/{project\_id}/elb/l7policies/{l7policy\_id}/rules

**Table 5-746** Path Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id  | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| l7policy_id | Yes       | String | <b>Definition:</b> Specifies the forwarding policy ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                        |

**Table 5-747** Query Parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                   |
|-----------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| limit     | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000 |



| Parameter    | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker       | No        | String           | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                               |
| page_reverse | No        | Boolean          | <b>Definition:</b> Specifies whether to use reverse query.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Query resources on the previous page.</li><li>• <b>false:</b> Query resources on the next page.</li></ul> <b>Default value:</b> false |
| id           | No        | Array of strings | <b>Definition:</b> Specifies the forwarding rule ID.<br>Multiple IDs can be used for query in the format of <i>id=xxx&amp;id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                          |

| Parameter           | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| compare_type        | No        | Array of strings | <b>Definition:</b> Specifies how requests are matched.<br>Multiple values can be used for query in the format of <i>compare_type=xxx&amp;compare_type=xxx</i> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>EQUAL_TO:</b> exact match.</li><li>• <b>REGEX:</b> regular expression match</li><li>• <b>STARTS_WITH:</b> prefix match</li></ul> <b>Default value:</b> N/A             |
| provisioning_status | No        | Array of strings | <b>Definition:</b> Specifies the provisioning status of the forwarding rule.<br>Multiple provisioning statuses can be used for query in the format of <i>provisioning_status=xxx&amp;provisioning_status=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can only be <b>ACTIVE</b> , indicating that the forwarding rule is provisioned successfully.<br><b>Default value:</b> N/A |
| invert              | No        | Boolean          | <b>Definition:</b> Specifies whether reverse matching is supported.<br><b>Constraints:</b> N/A<br><b>Range:</b> false<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                 |
| admin_state_up      | No        | Boolean          | <b>Definition:</b> Specifies the administrative status of the forwarding rule.<br>This parameter is unsupported. Please do not use it.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                |

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                               |
|-----------|-----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | No        | Array of strings | <b>Definition:</b> Specifies the value of the match content.<br>Multiple values can be used for query in the format of <i>value=xxx&amp;value=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                      |
| key       | No        | Array of strings | <b>Definition:</b> Specifies the key of the match content that is used to identify the forwarding rule.<br>Multiple keys can be used for query in the format of <i>key=xxx&amp;key=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| type      | No        | Array of strings | <b>Definition:</b> Specifies the match type. The value can be <b>HOST_NAME</b> or <b>PATH</b> .<br>Multiple types can be used for query in the format of <i>type=xxx&amp;type=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A      |

| Parameter             | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | Array of strings | <p><b>Definition:</b> Specifies the ID of the enterprise project.</p> <p>Multiple values can be used for query in the format of: <i>enterprise_project_id=xxx&amp;enterprise_project_id=xxx</i>.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enterprise_project_id</b> is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:l7rules:list</b> permission must be assigned to the user group.</li><li>• If <b>enterprise_project_id</b> is specified, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:l7rules:list</b> permission are queried.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

## Request Parameters

**Table 5-748** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                                         |
|--------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <p><b>Definition:</b> Specifies the token used for IAM authentication.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

## Response Parameters

Status code: 200

**Table 5-749** Response body parameters

| Parameter  | Type                           | Description                                                                                                                                                                          |
|------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                         | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| page_info  | <b>PageInfo</b> object         | <b>Definition:</b> Specifies the pagination information.                                                                                                                             |
| rules      | Array of <b>L7Rule</b> objects | <b>Definition:</b> Lists the forwarding rules.                                                                                                                                       |

**Table 5-750** PageInfo

| Parameter       | Type    | Description                                                                                                                                                                                                                          |
|-----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String  | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |
| next_marker     | String  | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A                                                                  |
| current_count   | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A                                                                                                                                |

**Table 5-751** L7Rule

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the forwarding rule.<br><b>Range:</b> The value can only be <b>true</b> .<br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                                                                                                                                                                                                             |
| compare_type   | String  | <b>Definition:</b> Specifies how requests are matched with the forwarding rule.<br><b>Range:</b> If <b>type</b> is set to <b>HOST_NAME</b> , this parameter can only be set to <b>EQUAL_TO</b> . If <b>type</b> is set to <b>PATH</b> , the value can be <b>REGEX</b> , <b>STARTS_WITH</b> , or <b>EQUAL_TO</b> .                                                                                                                                                                                                                                                                                       |
| key            | String  | <b>Definition:</b> Specifies the key of the match content.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| project_id     | String  | <b>Definition:</b> Specifies the ID of the project where the forwarding rule is used.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| type           | String  | <b>Definition:</b> Specifies the forwarding rule type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>HOST_NAME:</b> A domain name will be used for matching.</li><li>• <b>PATH:</b> A URL will be used for matching.</li><li>• <b>METHOD:</b> A request method will be used for matching.</li><li>• <b>HEADER:</b> A request header will be used for matching.</li><li>• <b>QUERY_STRING:</b> A query string will be used for matching.</li><li>• <b>SOURCE_IP:</b> A source IP address will be used for matching.</li><li>• <b>COOKIE:</b> A cookie will be used for matching.</li></ul> |

| Parameter           | Type                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value               | String                                | <b>Definition:</b> Specifies the value of the match item.<br><b>Range:</b> <ul style="list-style-type: none"><li>If <b>type</b> is set to <b>HOST_NAME</b>, the value can contain letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>If <b>type</b> is set to <b>PATH</b> and <b>compare_type</b> to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&amp;\$.*+?,=!: \/() []{}.</li><li>If <b>type</b> is set to <b>METHOD</b>, <b>SOURCE_IP</b>, <b>HEADER</b>, or <b>QUERY_STRING</b>, this parameter will not take effect, and <b>conditions</b> will be used to specify the key and value.</li></ul> |
| provisioning_status | String                                | <b>Definition:</b> Specifies the provisioning status of the forwarding rule. This parameter is invalid. The default value is <b>ACTIVE</b> .<br><b>Range:</b> <b>ACTIVE</b> , <b>PENDING_CREATE</b> , or <b>ERROR</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| invert              | Boolean                               | <b>Definition:</b> Specifies whether reverse matching is supported.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| id                  | String                                | <b>Definition:</b> Specifies the forwarding rule ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| conditions          | Array of <b>RuleCondition</b> objects | <b>Definition:</b> Specifies the conditions contained in a forwarding rule.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Parameter  | Type   | Description                                                                                                                                                                                                                                                                                                                                |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| created_at | String | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br><b>Note:</b> This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| updated_at | String | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br><b>Note:</b> This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.   |



**Table 5-752** RuleCondition

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <p><b>Definition:</b> Specifies the key of match item.</p> <p><b>Constraints:</b> All keys in the conditions list in the same rule must be the same.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>PATH</b>, <b>METHOD</b>, or <b>SOURCE_IP</b>, this parameter is an empty string.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the request and response header, and <b>value</b> indicates the value of the request and response header. Each key can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_).</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The key is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({ }), angle brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed.</li></ul> <p><b>Default value:</b> N/A</p> |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | String | <p><b>Definition:</b> Specifies the value of the match item.</p> <p><b>Constraints:</b> The value of each condition in a forwarding rule must be unique.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>key</b> is always an empty string and <b>value</b> indicates the domain name. Each value can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b>, <b>key</b> is always an empty string and <b>value</b> indicates the request path, which can contain 1 to 128 characters. If <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b> for a forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&amp;\$.*+?,:! \\() [] {}</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the HTTP header parameter, and <b>value</b> indicates the value of the request header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match one character.</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({}), angle</li></ul> |

| Parameter | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |      | <p>brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match one character.</p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>METHOD</b>, <b>key</b> is always an empty string and <b>value</b> indicates the HTTP method. The value can be <b>GET</b>, <b>PUT</b>, <b>POST</b>, <b>DELETE</b>, <b>PATCH</b>, <b>HEAD</b>, or <b>OPTIONS</b>.</li><li>• If <b>type</b> is set to <b>SOURCE_IP</b>, <b>key</b> is always an empty string and <b>value</b> indicates the source IP address of the request. The value is an IPv4 or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.</li></ul> <p><b>Default value:</b> N/A</p> |

## Example Requests

Querying forwarding rules

```
GET https://{ELB_Endpoint}/v3/{99a3fff0d03c428eac3678da6a7d0f24}/elb/l7policies/cf4360fd-8631-41ff-a6f5-b72c35da74be/rules
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "rules": [{
 "compare_type": "STARTS_WITH",
 "provisioning_status": "ACTIVE",
 "project_id": "99a3fff0d03c428eac3678da6a7d0f24",
 "invert": false,
 "admin_state_up": true,
 "value": "/ccc.html",
 "key": null,
 "type": "PATH",
 "id": "84f4fcae-9c15-4e19-a99f-72c0b08fd3d7"
 }],
 "page_info": {
 "previous_marker": "84f4fcae-9c15-4e19-a99f-72c0b08fd3d7",
 "current_count": 1
 },
}
```

```
"request_id" : "ae4dbd7d-9271-4040-98b6-3bfe45bb15ee"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListL7RulesSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ListL7RulesRequest request = new ListL7RulesRequest();
 request.withL7policyId("{l7policy_id}");
 try {
 ListL7RulesResponse response = client.listL7Rules(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrMsg());
 }
 }
}
```

### Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
```

```
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ListL7RulesRequest()
 request.l7policy_id = "{l7policy_id}"
 response = client.list_l7_rules(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ListL7RulesRequest{}
 request.L7policyId = "{l7policy_id}"
 response, err := client.ListL7Rules(request)
```

```
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.15.3 Query Forwarding Rules

### Function

This API is used to query the forwarding rules under a project.

### Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query.
- Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/l7policies/rules

**Table 5-753** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

**Table 5-754** Query Parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| limit     | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000                                                                                                                                                                                                                                                                  |
| marker    | No        | String  | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter    | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse | No        | Boolean          | <b>Definition:</b> Specifies whether to use reverse query.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true</b>: Query resources on the previous page.</li><li>• <b>false</b>: Query resources on the next page.</li></ul> <b>Default value:</b> false |
| id           | No        | Array of strings | <b>Definition:</b> Specifies the forwarding rule ID.<br>Multiple IDs can be used for query in the format of <i>id=xxx&amp;id=xxx</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| compare_type | No        | Array of strings | <b>Definition:</b> Specifies how requests are matched.<br>Multiple values can be used for query in the format of <i>compare_type=xxx&amp;compare_type=xxx</i> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: exact match.</li><li>• <b>REGEX</b>: regular expression match</li><li>• <b>STARTS_WITH</b>: prefix match</li></ul>                                                                                                                                                                                                                                 |



| Parameter           | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                    |
|---------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | No        | Array of strings | <b>Definition:</b> Specifies the provisioning status of the forwarding rule.<br><br>Multiple provisioning statuses can be used for query in the format of <i>provisioning_status=xxx&amp;provisioning_status=xxx</i> .<br><b>Range:</b> The value can only be <b>ACTIVE</b> , indicating that the forwarding rule is provisioned successfully. |
| invert              | No        | Boolean          | <b>Definition:</b> Specifies whether reverse matching is supported.<br><br>Note: The value must be <b>false</b> . This parameter can be updated but will not take effect.                                                                                                                                                                      |
| admin_state_up      | No        | Boolean          | <b>Definition:</b> Specifies the administrative status of the forwarding rule.<br><br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                     |
| value               | No        | Array of strings | <b>Definition:</b> Specifies the value of the match content.<br><br>Multiple values can be used for query in the format of <i>value=xxx&amp;value=xxx</i> .                                                                                                                                                                                    |
| key                 | No        | Array of strings | <b>Definition:</b> Specifies the key of the match content that is used to identify the forwarding rule.<br><br>Multiple keys can be used for query in the format of <i>key=xxx&amp;key=xxx</i> .<br><br>This parameter is unsupported. Please do not use it.                                                                                   |

| Parameter             | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type                  | No        | Array of strings | <b>Definition:</b> Specifies the match type. The value can be <b>HOST_NAME</b> or <b>PATH</b> .<br>The type of forwarding rules for the same forwarding policy cannot be the same.<br>Multiple types can be used for query in the format of <i>type=xxx&amp;type=xxx</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| enterprise_project_id | No        | Array of strings | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If <b>enterprise_project_id</b> is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:l7policies:list</b> permission must be assigned to the user group.</li><li>• If <b>enterprise_project_id</b> is specified, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:l7policies:list</b> permission are queried.</li></ul> Multiple values can be used for query in the format of:<br><i>enterprise_project_id=xxx&amp;enterprise_project_id=xxx</i> . |

## Request Parameters

**Table 5-755** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-756** Response body parameters

| Parameter  | Type                                    | Description                                                                                                                                                                          |
|------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                                  | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| page_info  | <a href="#">PageInfo</a> object         | <b>Definition:</b> Specifies the pagination information.                                                                                                                             |
| rules      | Array of <a href="#">L7Rule</a> objects | <b>Definition:</b> Lists the forwarding rules.                                                                                                                                       |

**Table 5-757** PageInfo

| Parameter       | Type   | Description                                                                                                                                                                                                                          |
|-----------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |
| next_marker     | String | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A                                                                  |

| Parameter     | Type    | Description                                                                                           |
|---------------|---------|-------------------------------------------------------------------------------------------------------|
| current_count | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A |

**Table 5-758** L7Rule

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                       |
|----------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the forwarding rule.<br><b>Range:</b> The value can only be <b>true</b> .<br>This parameter is unsupported. Please do not use it.                                                                                                                       |
| compare_type   | String  | <b>Definition:</b> Specifies how requests are matched with the forwarding rule.<br><b>Range:</b> If <b>type</b> is set to <b>HOST_NAME</b> , this parameter can only be set to <b>EQUAL_TO</b> . If <b>type</b> is set to <b>PATH</b> , the value can be <b>REGEX</b> , <b>STARTS_WITH</b> , or <b>EQUAL_TO</b> . |
| key            | String  | <b>Definition:</b> Specifies the key of the match content.<br><b>Range:</b> N/A                                                                                                                                                                                                                                   |
| project_id     | String  | <b>Definition:</b> Specifies the ID of the project where the forwarding rule is used.<br><b>Range:</b> N/A                                                                                                                                                                                                        |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type      | String | <p><b>Definition:</b> Specifies the forwarding rule type.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>HOST_NAME:</b> A domain name will be used for matching.</li><li>• <b>PATH:</b> A URL will be used for matching.</li><li>• <b>METHOD:</b> A request method will be used for matching.</li><li>• <b>HEADER:</b> A request header will be used for matching.</li><li>• <b>QUERY_STRING:</b> A query string will be used for matching.</li><li>• <b>SOURCE_IP:</b> A source IP address will be used for matching.</li><li>• <b>COOKIE:</b> A cookie will be used for matching.</li></ul>                                                                                                                                                                                                                                                                                                              |
| value     | String | <p><b>Definition:</b> Specifies the value of the match item.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, the value can contain letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b> and <b>compare_type</b> to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters: <code>_~'!;@^-%#&amp;\$.*+?,= :\ /() []{} </code></li><li>• If <b>type</b> is set to <b>METHOD</b>, <b>SOURCE_IP</b>, <b>HEADER</b>, or <b>QUERY_STRING</b>, this parameter will not take effect, and <b>conditions</b> will be used to specify the key and value.</li></ul> |

| Parameter           | Type                                  | Description                                                                                                                                                                                                                                                                                                                         |
|---------------------|---------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | String                                | <b>Definition:</b> Specifies the provisioning status of the forwarding rule. This parameter is invalid. The default value is <b>ACTIVE</b> .<br><b>Range:</b> <b>ACTIVE</b> , <b>PENDING_CREATE</b> , or <b>ERROR</b> .                                                                                                             |
| invert              | Boolean                               | <b>Definition:</b> Specifies whether reverse matching is supported.<br><b>Range:</b> N/A                                                                                                                                                                                                                                            |
| id                  | String                                | <b>Definition:</b> Specifies the forwarding rule ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                           |
| conditions          | Array of <b>RuleCondition</b> objects | <b>Definition:</b> Specifies the conditions contained in a forwarding rule.<br><b>Range:</b> N/A                                                                                                                                                                                                                                    |
| created_at          | String                                | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| updated_at          | String                                | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.   |

**Table 5-759** RuleCondition

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <p><b>Definition:</b> Specifies the key of match item.</p> <p><b>Constraints:</b> All keys in the conditions list in the same rule must be the same.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>PATH</b>, <b>METHOD</b>, or <b>SOURCE_IP</b>, this parameter is an empty string.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the request and response header, and <b>value</b> indicates the value of the request and response header. Each key can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_).</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The key is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({ }), angle brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed.</li></ul> <p><b>Default value:</b> N/A</p> |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | String | <p><b>Definition:</b> Specifies the value of the match item.</p> <p><b>Constraints:</b> The value of each condition in a forwarding rule must be unique.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>key</b> is always an empty string and <b>value</b> indicates the domain name. Each value can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b>, <b>key</b> is always an empty string and <b>value</b> indicates the request path, which can contain 1 to 128 characters. If <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b> for a forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&amp;\$.*+?,:! \()/[]{}.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the HTTP header parameter, and <b>value</b> indicates the value of the request header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match one character.</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({}), angle</li></ul> |



| Parameter | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |      | <p>brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match one character.</p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>METHOD</b>, <b>key</b> is always an empty string and <b>value</b> indicates the HTTP method. The value can be <b>GET</b>, <b>PUT</b>, <b>POST</b>, <b>DELETE</b>, <b>PATCH</b>, <b>HEAD</b>, or <b>OPTIONS</b>.</li><li>• If <b>type</b> is set to <b>SOURCE_IP</b>, <b>key</b> is always an empty string and <b>value</b> indicates the source IP address of the request. The value is an IPv4 or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.</li></ul> <p><b>Default value:</b> N/A</p> |

## Example Requests

Querying forwarding rules

```
GET https://{ELB_Endpoint}/v3/{99a3fff0d03c428eac3678da6a7d0f24}/elb/l7policies/rules
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "rules": [{
 "compare_type": "STARTS_WITH",
 "provisioning_status": "ACTIVE",
 "project_id": "99a3fff0d03c428eac3678da6a7d0f24",
 "invert": false,
 "admin_state_up": true,
 "value": "/ccc.html",
 "key": null,
 "type": "PATH",
 "id": "84f4fcae-9c15-4e19-a99f-72c0b08fd3d7",
 "l7policy_id": "1534dd84-44bf-4e0c-84b0-8842d5f828e2"
 }],
 "page_info": {
 "previous_marker": "84f4fcae-9c15-4e19-a99f-72c0b08fd3d7",
 "current_count": 1
 },
}
```

```
"request_id" : "ae4dbd7d-9271-4040-98b6-3bfe45bb15ee"
}
```

Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

Error Codes

See [Error Codes](#).

5.15.4 Viewing the Details of a Forwarding Rule

Function

This API is used to view the details of a forwarding rule.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v3/{project\_id}/elb/l7policies/{l7policy\_id}/rules/{l7rule\_id}

Table 5-760 Path Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id  | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| l7policy_id | Yes       | String | <b>Definition:</b> Specifies the forwarding policy.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                           |

| Parameter | Mandatory | Type   | Description                                                                                                                    |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------|
| l7rule_id | Yes       | String | <b>Definition:</b> Specifies the forwarding rule.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-761** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-762** Response body parameters

| Parameter  | Type                 | Description                                                                                                                                                                          |
|------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String               | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| rule       | <b>L7Rule</b> object | <b>Definition:</b> Specifies the forwarding rule.                                                                                                                                    |

**Table 5-763** L7Rule

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the forwarding rule.<br><b>Range:</b> The value can only be <b>true</b> .<br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                                                                                                                                                                                                             |
| compare_type   | String  | <b>Definition:</b> Specifies how requests are matched with the forwarding rule.<br><b>Range:</b> If <b>type</b> is set to <b>HOST_NAME</b> , this parameter can only be set to <b>EQUAL_TO</b> . If <b>type</b> is set to <b>PATH</b> , the value can be <b>REGEX</b> , <b>STARTS_WITH</b> , or <b>EQUAL_TO</b> .                                                                                                                                                                                                                                                                                       |
| key            | String  | <b>Definition:</b> Specifies the key of the match content.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| project_id     | String  | <b>Definition:</b> Specifies the ID of the project where the forwarding rule is used.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| type           | String  | <b>Definition:</b> Specifies the forwarding rule type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>HOST_NAME:</b> A domain name will be used for matching.</li><li>• <b>PATH:</b> A URL will be used for matching.</li><li>• <b>METHOD:</b> A request method will be used for matching.</li><li>• <b>HEADER:</b> A request header will be used for matching.</li><li>• <b>QUERY_STRING:</b> A query string will be used for matching.</li><li>• <b>SOURCE_IP:</b> A source IP address will be used for matching.</li><li>• <b>COOKIE:</b> A cookie will be used for matching.</li></ul> |

| Parameter             | Type                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------------------|---------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value                 | String                                | <b>Definition:</b> Specifies the value of the match item.<br><b>Range:</b> <ul style="list-style-type: none"><li>If <b>type</b> is set to <b>HOST_NAME</b>, the value can contain letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>If <b>type</b> is set to <b>PATH</b> and <b>compare_type</b> to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&amp;\$.*+?,=!: \/() []{}.</li><li>If <b>type</b> is set to <b>METHOD</b>, <b>SOURCE_IP</b>, <b>HEADER</b>, or <b>QUERY_STRING</b>, this parameter will not take effect, and <b>conditions</b> will be used to specify the key and value.</li></ul> |
| provisioning_statuses | String                                | <b>Definition:</b> Specifies the provisioning status of the forwarding rule. This parameter is invalid. The default value is <b>ACTIVE</b> .<br><b>Range:</b> <b>ACTIVE</b> , <b>PENDING_CREATE</b> , or <b>ERROR</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| invert                | Boolean                               | <b>Definition:</b> Specifies whether reverse matching is supported.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| id                    | String                                | <b>Definition:</b> Specifies the forwarding rule ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| conditions            | Array of <b>RuleCondition</b> objects | <b>Definition:</b> Specifies the conditions contained in a forwarding rule.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Parameter  | Type   | Description                                                                                                                                                                                                                                                                                                                                |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| created_at | String | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br><b>Note:</b> This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| updated_at | String | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br><b>Note:</b> This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.   |

**Table 5-764** RuleCondition

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <p><b>Definition:</b> Specifies the key of match item.</p> <p><b>Constraints:</b> All keys in the conditions list in the same rule must be the same.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>PATH</b>, <b>METHOD</b>, or <b>SOURCE_IP</b>, this parameter is an empty string.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the request and response header, and <b>value</b> indicates the value of the request and response header. Each key can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_).</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The key is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({ }), angle brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed.</li></ul> <p><b>Default value:</b> N/A</p> |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | String | <p><b>Definition:</b> Specifies the value of the match item.</p> <p><b>Constraints:</b> The value of each condition in a forwarding rule must be unique.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>key</b> is always an empty string and <b>value</b> indicates the domain name. Each value can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b>, <b>key</b> is always an empty string and <b>value</b> indicates the request path, which can contain 1 to 128 characters. If <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b> for a forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&amp;\$.*+?,:! \()/[]{}.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the HTTP header parameter, and <b>value</b> indicates the value of the request header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match one character.</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({}), angle</li></ul> |



| Parameter | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |      | <p>brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match one character.</p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>METHOD</b>, <b>key</b> is always an empty string and <b>value</b> indicates the HTTP method. The value can be <b>GET</b>, <b>PUT</b>, <b>POST</b>, <b>DELETE</b>, <b>PATCH</b>, <b>HEAD</b>, or <b>OPTIONS</b>.</li><li>• If <b>type</b> is set to <b>SOURCE_IP</b>, <b>key</b> is always an empty string and <b>value</b> indicates the source IP address of the request. The value is an IPv4 or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.</li></ul> <p><b>Default value:</b> N/A</p> |

## Example Requests

Querying the details of a given forwarding rule

```
GET https://{ELB_Endpoint}/v3/{99a3fff0d03c428eac3678da6a7d0f24}/elb/l7policies/cf4360fd-8631-41ff-a6f5-b72c35da74be/rules/84f4fcae-9c15-4e19-a99f-72c0b08fd3d7
```

## Example Responses

**Status code: 200**

OK

```
{
 "rule" : {
 "compare_type" : "STARTS_WITH",
 "provisioning_status" : "ACTIVE",
 "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
 "invert" : false,
 "admin_state_up" : true,
 "value" : "/ccc.html",
 "key" : null,
 "type" : "PATH",
 "id" : "84f4fcae-9c15-4e19-a99f-72c0b08fd3d7"
 },
 "request_id" : "0d799435-259e-459f-b2bc-0beee06f6a77"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowL7RuleSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowL7RuleRequest request = new ShowL7RuleRequest();
 request.withL7policyId("{l7policy_id}");
 request.withL7ruleId("{l7rule_id}");
 try {
 ShowL7RuleResponse response = client.showL7Rule(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

### Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *
```

```
if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ShowL7RuleRequest()
 request.l7policy_id = "{l7policy_id}"
 request.l7rule_id = "{l7rule_id}"
 response = client.show_l7_rule(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ShowL7RuleRequest{}
 request.L7policyId = "{l7policy_id}"
 request.L7ruleId = "{l7rule_id}"
 response, err := client.ShowL7Rule(request)
 if err == nil {
```

```
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description |
|-------------|-------------|
| 200         | OK          |

## Error Codes

See [Error Codes](#).

# 5.15.5 Updating a Forwarding Rule

## Function

This API is used to update a forwarding rule.

## Calling Method

For details, see [Calling APIs](#).

## URI

PUT /v3/{project\_id}/elb/l7policies/{l7policy\_id}/rules/{l7rule\_id}

**Table 5-765** Path Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                         |
|-------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------|
| l7policy_id | Yes       | String | <b>Definition:</b> Specifies the forwarding policy ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| l7rule_id  | Yes       | String | <b>Definition:</b> Specifies the forwarding rule ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                          |
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-766** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-767** Request body parameters

| Parameter | Mandatory | Type                                      | Description                                                                  |
|-----------|-----------|-------------------------------------------|------------------------------------------------------------------------------|
| rule      | Yes       | <a href="#">UpdateL7RuleOption</a> object | <b>Definition:</b> Specifies the forwarding rule.<br><b>Constraints:</b> N/A |

**Table 5-768** UpdateL7RuleOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | <b>Definition:</b> Specifies the administrative status of the forwarding rule.<br><b>Constraints:</b> The value can only be <b>true</b> .<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| compare_type   | No        | String  | <b>Definition:</b> Specifies how requests are matched with the forwarding rule.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, the value can only be <b>EQUAL_TO</b>, and asterisks (*) can be used as wildcard characters.</li><li>• If <b>type</b> is set to <b>PATH</b>, the value can be <b>REGEX</b>, <b>STARTS_WITH</b>, or <b>EQUAL_TO</b>.</li><li>• If <b>type</b> is set to <b>METHOD</b> or <b>SOURCE_IP</b>, the value can only be <b>EQUAL_TO</b>.</li><li>• If <b>type</b> is set to <b>HEADER</b> or <b>QUERY_STRING</b>, the value can only be <b>EQUAL_TO</b>, asterisks (*) and question marks (?) can be used as wildcard characters.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: exact match</li><li>• <b>REGEX</b>: regular expression match</li><li>• <b>STARTS_WITH</b>: prefix match</li></ul> <b>Default value:</b> N/A |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                            |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| invert    | No        | Boolean | <b>Definition:</b> Specifies whether reverse matching is supported.<br><b>Constraints:</b> N/A<br><b>Range:</b> true or false<br><b>Default value:</b> false<br>This parameter is unsupported. Please do not use it.                                                                                   |
| key       | No        | String  | <b>Definition:</b> Specifies the key of the match item. For example, if an HTTP header is used for matching, <b>key</b> is the name of the HTTP header parameter.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br>This parameter is unsupported. Please do not use it. |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | No        | String | <p><b>Definition:</b> Specifies the value of the match item. For example, if a domain name is used for matching, <b>value</b> is the domain name.</p> <p><b>Constraints:</b> This parameter takes effect only when <b>conditions</b> is left blank.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, the value can contain letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b> and <b>compare_type</b> to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters: <code>_~' ;@^-%#&amp;\$. * +?,=!:  \ / ( ) [ ] { }</code></li><li>• If <b>type</b> is set to <b>METHOD</b>, <b>SOURCE_IP</b>, <b>HEADER</b>, or <b>QUERY_STRING</b>, this parameter will not take effect, and <b>conditions</b> will be used to specify the key and value.</li></ul> <p><b>Default value:</b> N/A</p> |



| Parameter  | Mandatory | Type                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------|-----------|------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| conditions | No        | Array of <a href="#">UpdateRuleCondition</a> objects | <p><b>Definition:</b> Specifies the conditions contained in a forwarding rule.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter takes effect only when <b>enhance_l7policy_enable</b> is set to <b>true</b>.</li><li>• If <b>conditions</b> is set for a forwarding rule, the values of <b>key</b> and <b>value</b> are ignored.</li><li>• All keys in the conditions of a rule must be the same, and the values must be unique.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

**Table 5-769** UpdateRuleCondition

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | No        | String | <p><b>Definition:</b> Specifies the key of match item.</p> <p><b>Constraints:</b> All keys in the conditions list in the same rule must be the same.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>PATH</b>, <b>METHOD</b>, or <b>SOURCE_IP</b>, this parameter is an empty string.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the HTTP header parameter, and <b>value</b> indicates the value of the request header parameter. Each key can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_).</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The key is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({ }), angle brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed.</li></ul> <p><b>Default value:</b> N/A</p> |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | No        | String | <p><b>Definition:</b> Specifies the value of the match item.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The key of each condition in a forwarding rule must be the same.</li><li>• The value of each condition in a forwarding rule must be unique.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>key</b> is always an empty string and <b>value</b> indicates the domain name. Each value can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b>, <b>key</b> is always an empty string and <b>value</b> indicates the request path, which can contain 1 to 128 characters. If <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b> for a forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&amp;\$.*+? ,=!: \\V()[]{}.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the HTTP header parameter, and <b>value</b> indicates the value of the request header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are</li></ul> |

| Parameter | Mandatory | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------|-----------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |           |      | <p>allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match one character.</p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({ }), angle brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match one character.</li><li>• If <b>type</b> is set to <b>METHOD</b>, <b>key</b> is always an empty string and <b>value</b> indicates the HTTP method. The value can be <b>GET</b>, <b>PUT</b>, <b>POST</b>, <b>DELETE</b>, <b>PATCH</b>, <b>HEAD</b>, or <b>OPTIONS</b>.</li><li>• If <b>type</b> is set to <b>SOURCE_IP</b>, <b>key</b> is always an empty string and <b>value</b> indicates the source IP address of the request. The value is an IPv4 or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.</li></ul> <p><b>Default value:</b> N/A</p> |

## Response Parameters

Status code: 200

**Table 5-770** Response body parameters

| Parameter  | Type                 | Description                                                                                                                                                                          |
|------------|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String               | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| rule       | <b>L7Rule</b> object | <b>Definition:</b> Specifies the forwarding rule.                                                                                                                                    |

**Table 5-771** L7Rule

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                       |
|----------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the forwarding rule.<br><b>Range:</b> The value can only be <b>true</b> .<br>This parameter is unsupported. Please do not use it.                                                                                                                       |
| compare_type   | String  | <b>Definition:</b> Specifies how requests are matched with the forwarding rule.<br><b>Range:</b> If <b>type</b> is set to <b>HOST_NAME</b> , this parameter can only be set to <b>EQUAL_TO</b> . If <b>type</b> is set to <b>PATH</b> , the value can be <b>REGEX</b> , <b>STARTS_WITH</b> , or <b>EQUAL_TO</b> . |
| key            | String  | <b>Definition:</b> Specifies the key of the match content.<br><b>Range:</b> N/A                                                                                                                                                                                                                                   |
| project_id     | String  | <b>Definition:</b> Specifies the ID of the project where the forwarding rule is used.<br><b>Range:</b> N/A                                                                                                                                                                                                        |

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type      | String | <p><b>Definition:</b> Specifies the forwarding rule type.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>HOST_NAME:</b> A domain name will be used for matching.</li><li>• <b>PATH:</b> A URL will be used for matching.</li><li>• <b>METHOD:</b> A request method will be used for matching.</li><li>• <b>HEADER:</b> A request header will be used for matching.</li><li>• <b>QUERY_STRING:</b> A query string will be used for matching.</li><li>• <b>SOURCE_IP:</b> A source IP address will be used for matching.</li><li>• <b>COOKIE:</b> A cookie will be used for matching.</li></ul>                                                                                                                                                                                                                                                                                                              |
| value     | String | <p><b>Definition:</b> Specifies the value of the match item.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, the value can contain letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b> and <b>compare_type</b> to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters: <code>_~'!:@^-%#&amp;\$.*+?,= :\ /() []{} </code></li><li>• If <b>type</b> is set to <b>METHOD</b>, <b>SOURCE_IP</b>, <b>HEADER</b>, or <b>QUERY_STRING</b>, this parameter will not take effect, and <b>conditions</b> will be used to specify the key and value.</li></ul> |

| Parameter           | Type                                           | Description                                                                                                                                                                                                                                                                                                                         |
|---------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | String                                         | <b>Definition:</b> Specifies the provisioning status of the forwarding rule. This parameter is invalid. The default value is <b>ACTIVE</b> .<br><b>Range:</b> <b>ACTIVE</b> , <b>PENDING_CREATE</b> , or <b>ERROR</b> .                                                                                                             |
| invert              | Boolean                                        | <b>Definition:</b> Specifies whether reverse matching is supported.<br><b>Range:</b> N/A                                                                                                                                                                                                                                            |
| id                  | String                                         | <b>Definition:</b> Specifies the forwarding rule ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                           |
| conditions          | Array of <a href="#">RuleCondition</a> objects | <b>Definition:</b> Specifies the conditions contained in a forwarding rule.<br><b>Range:</b> N/A                                                                                                                                                                                                                                    |
| created_at          | String                                         | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers. |
| updated_at          | String                                         | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> The value must be a UTC time in the <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> format.<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.   |

**Table 5-772** RuleCondition

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <p><b>Definition:</b> Specifies the key of match item.</p> <p><b>Constraints:</b> All keys in the conditions list in the same rule must be the same.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>PATH</b>, <b>METHOD</b>, or <b>SOURCE_IP</b>, this parameter is an empty string.</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the request and response header, and <b>value</b> indicates the value of the request and response header. Each key can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_).</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The key is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({ }), angle brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed.</li></ul> <p><b>Default value:</b> N/A</p> |



| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | String | <p><b>Definition:</b> Specifies the value of the match item.</p> <p><b>Constraints:</b> The value of each condition in a forwarding rule must be unique.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>HOST_NAME</b>, <b>key</b> is always an empty string and <b>value</b> indicates the domain name. Each value can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), and must start with a letter, digit, or asterisk (*). If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</li><li>• If <b>type</b> is set to <b>PATH</b>, <b>key</b> is always an empty string and <b>value</b> indicates the request path, which can contain 1 to 128 characters. If <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b> for a forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters: _~';@^-%#&amp;\$. *+?,=!: \\() [] {}</li><li>• If <b>type</b> is set to <b>HEADER</b>, <b>key</b> indicates the name of the HTTP header parameter, and <b>value</b> indicates the value of the request header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match one character.</li><li>• If <b>type</b> is set to <b>QUERY_STRING</b>, <b>key</b> indicates the name of the query parameter, and <b>value</b> indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([ ]), curly brackets ({}), angle</li></ul> |

| Parameter | Type | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|           |      | <p>brackets (&lt; &gt;), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&amp;), vertical bars ( ), percent signs (%), and tildes (~) are not allowed. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match one character.</p> <ul style="list-style-type: none"><li>• If <b>type</b> is set to <b>METHOD</b>, <b>key</b> is always an empty string and <b>value</b> indicates the HTTP method. The value can be <b>GET</b>, <b>PUT</b>, <b>POST</b>, <b>DELETE</b>, <b>PATCH</b>, <b>HEAD</b>, or <b>OPTIONS</b>.</li><li>• If <b>type</b> is set to <b>SOURCE_IP</b>, <b>key</b> is always an empty string and <b>value</b> indicates the source IP address of the request. The value is an IPv4 or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.</li></ul> <p><b>Default value:</b> N/A</p> |

## Example Requests

### Modifying a forwarding rule

PUT https://{ELB\_Endpoint}/v3/{99a3fff0d03c428eac3678da6a7d0f24}/elb/l7policies/cf4360fd-8631-41ff-a6f5-b72c35da74be/rules/84f4fcae-9c15-4e19-a99f-72c0b08fd3d7

```
{
 "rule" : {
 "compare_type" : "STARTS_WITH",
 "value" : "/ccc.html"
 }
}
```

## Example Responses

### Status code: 200

Successful request.

```
{
 "rule" : {
 "compare_type" : "STARTS_WITH",
 "provisioning_status" : "ACTIVE",
 "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
 "invert" : false,
 "admin_state_up" : true,
 "value" : "/ccc.html",
 "key" : null,
 "type" : "PATH",
 }
}
```

```
"id" : "84f4fcae-9c15-4e19-a99f-72c0b08fd3d7"
},
"request_id" : "133096f9-e754-430d-a2c2-e61fe1190aa8"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

#### Modifying a forwarding rule

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class UpdateL7RuleSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 UpdateL7RuleRequest request = new UpdateL7RuleRequest();
 request.withL7policyId("{l7policy_id}");
 request.withL7ruleId("{l7rule_id}");
 UpdateL7RuleRequestBody body = new UpdateL7RuleRequestBody();
 UpdateL7RuleOption rulebody = new UpdateL7RuleOption();
 rulebody.withCompareType("STARTS_WITH")
 .withValue("/ccc.html");
 body.withRule(rulebody);
 request.withBody(body);
 try {
 UpdateL7RuleResponse response = client.updateL7Rule(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 }
 }
}
```

```
 System.out.println(e.getErrorMsg());
 }
}
}
```

## Python

### Modifying a forwarding rule

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = UpdateL7RuleRequest()
 request.l7policy_id = "{l7policy_id}"
 request.l7rule_id = "{l7rule_id}"
 rulebody = UpdateL7RuleOption(
 compare_type="STARTS_WITH",
 value="/ccc.html"
)
 request.body = UpdateL7RuleRequestBody(
 rule=rulebody
)
 response = client.update_l7_rule(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Modifying a forwarding rule

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
```

```
// The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
// In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak := os.Getenv("CLOUD_SDK_AK")
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.UpdateL7RuleRequest{}
request.L7policyId = "{l7policy_id}"
request.L7ruleId = "{l7rule_id}"
compareTypeRule := "STARTS_WITH"
valueRule := "/ccc.html"
rulebody := &model.UpdateL7RuleOption{
 CompareType: &compareTypeRule,
 Value: &valueRule,
}
request.Body = &model.UpdateL7RuleRequestBody{
 Rule: rulebody,
}
response, err := client.UpdateL7Rule(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.15.6 Deleting a Forwarding Rule

### Function

This API is used to delete a forwarding rule.

### Calling Method

For details, see [Calling APIs](#).

### URI

DELETE /v3/{project\_id}/elb/l7policies/{l7policy\_id}/rules/{l7rule\_id}

Table 5-773 Path Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id  | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| l7policy_id | Yes       | String | <b>Definition:</b> Specifies the forwarding policy ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                        |
| l7rule_id   | Yes       | String | <b>Definition:</b> Specifies the forwarding rule ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                          |

## Request Parameters

**Table 5-774** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 204**

Successful request.

None

## Example Requests

Deleting a forwarding rule

```
DELETE https://{ELB_Endpoint}/v3/{99a3fff0d03c428eac3678da6a7d0f24}/elb/l7policies/cf4360fd-8631-41ff-a6f5-b72c35da74be/rules/84f4fcae-9c15-4e19-a99f-72c0b08fd3d7
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeleteL7RuleSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 }
}
```

```
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
DeleteL7RuleRequest request = new DeleteL7RuleRequest();
request.withL7policyId("{l7policy_id}");
request.withL7ruleId("{l7rule_id}");
try {
 DeleteL7RuleResponse response = client.deleteL7Rule(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeleteL7RuleRequest()
 request.l7policy_id = "{l7policy_id}"
 request.l7rule_id = "{l7rule_id}"
 response = client.delete_l7_rule(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
```



```
print(e.error_code)
print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.DeleteL7RuleRequest{}
 request.L7policyId = "{l7policy_id}"
 request.L7ruleId = "{l7rule_id}"
 response, err := client.DeleteL7Rule(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.16 Active/Standby Backend Server Group

### 5.16.1 Creating an Active/Standby Backend Server Group

#### Function

This API is used to create an active/standby backend server group.

#### Constraints

Note the following when you create a backend server group:

- If **session\_persistence** is specified, **cookie\_name** is available only when **type** is set to **APP\_COOKIE**.
- If **listener\_id** is specified, the listener must have no backend server group associated.

#### Calling Method

For details, see [Calling APIs](#).

#### URI

POST /v3/{project\_id}/elb/master-slave-pools

**Table 5-775** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-776** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-777** Request body parameters

| Parameter | Mandatory | Type                               | Description                                                                                                                                                                                                 |
|-----------|-----------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pool      | Yes       | CreateMasterSlavePoolOption object | <b>Definition:</b> Specifies the request body for creating an active/standby backend server group.<br><b>Constraints:</b> Active/Standby backend server groups are not supported by gateway load balancers. |

**Table 5-778** CreateMasterSlavePoolOption

| Parameter   | Mandatory | Type   | Description                                                                                                                                                             |
|-------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description | No        | String | <b>Definition:</b> Specifies the supplementary information about the backend server group.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| lb_algorithm    | Yes       | String | <b>Definition:</b> Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN:</b> weighted round robin</li><li>• <b>LEAST_CONNECTIONS:</b> weighted least connections</li><li>• <b>SOURCE_IP:</b> source IP hash</li><li>• <b>QUIC_CID:</b> connection ID</li></ul> <b>Default value:</b> N/A |
| loadbalancer_id | No        | String | <b>Definition:</b> Specifies the ID of the load balancer associated with the backend server group.<br><b>Constraints:</b> Specify at least one of <b>listener_id</b> , <b>loadbalancer_id</b> , or <b>type</b> .<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                   |
| listener_id     | No        | String | <b>Definition:</b> Specifies the ID of the listener associated with the backend server group.<br><b>Constraints:</b> Specify at least one of <b>listener_id</b> , <b>loadbalancer_id</b> , or <b>type</b> .<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                        |
| name            | No        | String | <b>Definition:</b> Specifies the backend server group name.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                             |

| Parameter           | Mandatory | Type                                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|-----------|-----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id          | No        | String                                                    | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A<br><b>NOTE</b><br>This parameter is invalid. The project ID in the URL is used.                                                                                                                                                                                                                                                                                                                                                                        |
| protocol            | Yes       | String                                                    | <b>Definition:</b> Specifies the protocol used by the backend server group to receive requests.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If the listener's protocol is <b>UDP</b>, the protocol of the backend server group must be <b>UDP</b> or <b>QUIC</b>.</li><li>• If the listener's protocol is <b>TCP</b>, the protocol of the backend server group must be <b>TCP</b>.</li><li>• If the listener's protocol is <b>TLS</b>, the protocol of the backend server group can be <b>TLS</b> or <b>TCP</b>. If the protocol of the backend server group is TCP, <b>ip_version</b> must be set to <b>v4</b>.</li></ul> <b>Range:</b> The value can be <b>TCP</b> , <b>UDP</b> , <b>QUIC</b> , or <b>TLS</b> .<br><b>Default value:</b> N/A |
| session_persistence | No        | <a href="#">CreatePoolSessionPersistenceOption</a> object | <b>Definition:</b> Specifies the sticky session.<br><b>Constraints:</b> Slow start and sticky session cannot be enabled at the same time. If both are enabled, sticky session will be invalid.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vpc_id    | No        | String | <p><b>Definition:</b> Specifies the ID of the VPC where the backend server group works.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• The backend server group must be associated with the VPC.</li><li>• Only backend servers in the VPC or IP as backend servers can be added.</li><li>• <b>type</b> must be set to <b>instance</b>.</li><li>• <b>vpc_id</b> must be specified for IP backend server groups. The value must be the same as that defined by <b>vpc_id</b> for the load balancer.</li><li>• If <b>vpc_id</b> is not specified, VPC ID is determined by the VPC where the backend server works.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |
| type      | Yes       | String | <p><b>Definition:</b> Specifies the type of the backend server group.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>instance:</b> Any type of backend servers can be added. <b>vpc_id</b> is mandatory.</li><li>• <b>ip:</b> Only IP as backend servers can be added. <b>vpc_id</b> cannot be specified.</li></ul> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                    |

| Parameter     | Mandatory | Type                                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------|-----------|----------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_version    | No        | String                                                         | <b>Definition:</b> Specifies the IP address version supported by the backend server group.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• Shared load balancers: The value is fixed at <b>v4</b>.</li><li>• Dedicated load balancers: The value can be <b>dualstack</b> or <b>v4</b>. If the protocol of the backend server group is TCP or UDP, the value is <b>dualstack</b>. If the protocol of the backend server group is HTTP, the value is <b>v4</b>.</li></ul> <b>Default value:</b> N/A |
| members       | Yes       | Array of <a href="#">CreateMasterSlaveMemberOption</a> objects | <b>Definition:</b> Specifies the backend server of the active/standby server group.<br><b>Constraints:</b> Only two backend servers can be added, one serving as the active server and the other as the standby server.                                                                                                                                                                                                                                                                                                               |
| healthmonitor | Yes       | <a href="#">CreateMasterSlaveHealthMonitorOption</a> object    | <b>Definition:</b> Specifies the health check for active/standby backend server group. Health check is enabled by default and cannot be disabled.<br><b>Constraints:</b> N/A                                                                                                                                                                                                                                                                                                                                                          |

| Parameter              | Mandatory | Type                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------|-----------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| any_port_enable        | No        | Boolean                           | <b>Definition:</b> Specifies whether to enable <b>any_port_enable</b> for a backend server group. If this option is enabled, the listener routes the requests to the backend server over the same port as the frontend port. If this option is disabled, the listener routes the requests over the port specified by <b>protocol_port</b> .<br><b>Constraints:</b> This option is available only for TCP, UDP, and QUIC backend server groups.<br><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).<br><b>Constraints:</b> N/A |
| connection_drain       | No        | <b>ConnectionDrain</b> object     | <b>Definition:</b> Specifies the configurations of deregistration delay.<br>This parameter takes effect when: <ul style="list-style-type: none"><li>• A backend server is removed from a backend server group.</li><li>• A backend server is detected unhealthy or health checks fail.</li><li>• The weight of a backend server is 0.</li></ul> <b>Constraints:</b> This parameter is only available for TCP, UDP, and QUIC backend server groups and TCP and UDP listeners.                                                                                       |
| quic_cid_hash_strategy | No        | <b>QuicCidHashStrategy</b> object | <b>Definition:</b> Specifies multi-path forwarding configuration based on destination connection IDs.<br><b>Constraints:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                   |



| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | String | <b>Definition:</b> Specifies the ID of the enterprise project. If no enterprise project ID is specified during resource creation, 0 is returned, indicating that the resource belongs to the default enterprise project.<br><b>Constraints:</b> The enterprise project ID cannot be "", 0, or an enterprise project ID that does not exist.<br><b>Range:</b> N/A<br><b>Default value:</b> 0 |

**Table 5-779** CreatePoolSessionPersistenceOption

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cookie_name | No        | String | <b>Definition:</b> Specifies the cookie name.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter takes effect only when <b>type</b> is set to <b>APP_COOKIE</b>. Otherwise, an error will be returned.</li><li>• This parameter is not supported by gateway load balancers. Please do not use it.</li></ul> <b>Range:</b> The value can contain a maximum of 1,024 characters.<br><b>Default value:</b> N/A |

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type                | Yes       | String  | <p><b>Definition:</b> Specifies the sticky session type.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If the protocol of the backend server group is <b>TCP</b> or <b>UDP</b>, only <b>SOURCE_IP</b> takes effect.</li><li>• If the protocol of the backend server group is <b>HTTP</b> or <b>HTTPS</b>, only <b>HTTP_COOKIE</b> and <b>APP_COOKIE</b> take effect.</li><li>• If the backend server group's protocol is <b>QUIC</b>, <b>session_persistence</b> must be set to <b>true</b> and <b>type</b> set to <b>SOURCE_IP</b>.</li></ul> <p><b>Range:</b> <b>SOURCE_IP</b>, <b>HTTP_COOKIE</b>, or <b>APP_COOKIE</b>.</p> <p><b>Default value:</b> N/A</p> |
| persistence_timeout | No        | Integer | <p><b>Definition:</b> Specifies the stickiness duration, in minutes.</p> <p><b>Constraints:</b> This parameter will not take effect when <b>type</b> is set to <b>APP_COOKIE</b>.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If the protocol of the backend server group is <b>TCP</b> or <b>UDP</b>, the value ranges from <b>1</b> to <b>60</b>, and the default value is <b>1</b>.</li><li>• If the protocol of the backend server group is <b>HTTP</b> or <b>HTTPS</b>, the value ranges from <b>1</b> to <b>1440</b>, and the default value is <b>1440</b>.</li></ul> <p><b>Default value:</b> N/A</p>                                                         |

**Table 5-780** CreateMasterSlaveMemberOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| address        | Yes       | String  | <b>Definition:</b> Specifies the IP address bound to the backend server.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If <b>subnet_cidr_id</b> is left blank, IP as backend servers will be added. In this case, the IP address must be an IPv4 address.</li><li>• If <b>subnet_cidr_id</b> is not left blank, ECSs will be added as backend servers. It must be in the subnet specified by <b>subnet_cidr_id</b>.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| admin_state_up | No        | Boolean | <b>Definition:</b> Specifies the administrative status of the backend server.<br><b>Constraints:</b> Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether ECSs exist.<br><b>Range:</b> If ECSs exist, the value is <b>true</b> . Otherwise, the value is <b>false</b> .<br><b>Default value:</b> N/A                                                                                                                |
| name           | No        | String  | <b>Definition:</b> Specifies the backend server name.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                            |

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol_port  | No        | Integer | <b>Definition:</b> Specifies the port used by the backend server to receive requests.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A<br><b>NOTE</b><br>This parameter can be left blank because it does not take effect if <b>any_port_enable</b> is set to <b>true</b> for a backend server group.                                                                                                                                                                                                                                                                                                      |
| subnet_cidr_id | No        | String  | <b>Definition:</b> Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• The IPv4 or IPv6 subnet must be in the same VPC as the subnet of the load balancer.</li><li>• If <b>ip_target_enable</b> is set to <b>true</b>, this parameter can be left blank, indicating that an IP as backend server will be added. In this case, IP as backend servers must use private IPv4 addresses, and the protocol of the backend server group must be TCP, UDP, TLS, HTTP, HTTPS, QUIC, or GRPC.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| role           | Yes       | String  | <b>Definition:</b> Specifies the type of the backend server.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>master:</b> active backend server</li><li>• <b>slave:</b> standby backend server</li></ul> <b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                               |

**Table 5-781** CreateMasterSlaveHealthMonitorOption

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| delay          | Yes       | Integer | <b>Definition:</b> Specifies the interval between health checks, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> 1 to 50<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| domain_name    | No        | String  | <b>Definition:</b> Specifies the domain name that HTTP requests are sent to during the health check.<br><b>Constraints:</b> This parameter is available only when <b>type</b> is set to <b>HTTP</b> or <b>HTTPS</b> .<br><b>Range:</b> The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter.<br><b>Default value:</b> <b>null</b> , indicating that the virtual IP address of the load balancer is used as the destination address of HTTP requests                                                                                         |
| expected_codes | No        | String  | <b>Definition:</b> Specifies the expected HTTP status code.<br><b>Constraints:</b> This parameter will take effect only when <b>type</b> is set to <b>HTTP</b> , <b>HTTPS</b> or <b>GRPC</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>• A specific value, for example, 200</li><li>• A list of values that are separated with commas (,), for example, 200, 202</li><li>• A value range, for example, 200-204</li></ul> <b>Default value:</b> If <b>type</b> is set to <b>GRPC</b> , the default value is 0. If <b>type</b> is set to other values, the default value is <b>200</b> . |

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                         |
|------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| http_method      | No        | String  | <b>Definition:</b> Specifies the HTTP method.<br><b>Constraints:</b> This parameter is available when <b>type</b> is set to <b>HTTP</b> or <b>HTTPS</b> .<br><b>Range:</b> <b>GET</b> , <b>HEAD</b> , or <b>POST</b><br><b>Default value:</b> <b>GET</b>            |
| max_retries      | Yes       | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <b>1</b> to <b>10</b><br><b>Default value:</b> N/A |
| max_retries_down | No        | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> <b>1</b> to <b>10</b><br><b>Default value:</b> N/A |
| monitor_port     | No        | Integer | Specifies the port used for the health check.<br><b>Constraints:</b> N/A<br><b>Range:</b> <b>1</b> to <b>65535</b><br><b>Default value:</b> <b>null</b> , indicating the port of a backend server will be used by default.                                          |
| name             | No        | String  | <b>Definition:</b> Specifies the health check name.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                    |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| timeout   | Yes       | Integer | <b>Definition:</b> Specifies the maximum time required for waiting for a response from the health check, in seconds. It is recommended that you set the value less than that of parameter <b>delay</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| type      | Yes       | String  | <b>Definition:</b> Specifies the health check protocol.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• If the protocol of the backend server is QUIC, the value can only be <b>UDP_CONNECT</b>.</li><li>• If the protocol of the backend server is UDP, the value can only be <b>UDP_CONNECT</b>.</li><li>• If the protocol of the backend server is TCP, the value can only be <b>TCP</b>, <b>HTTP</b>, or <b>HTTPS</b>.</li><li>• If the protocol of the backend server is HTTP, the value can only be <b>TCP</b>, <b>HTTP</b>, <b>HTTPS</b>, <b>GRPC</b>, or <b>TLS</b>.</li><li>• If the protocol of the backend server is HTTPS, the value can only be <b>TCP</b>, <b>HTTP</b>, <b>HTTPS</b>, <b>GRPC</b>, or <b>TLS</b>.</li></ul> <b>Range:</b> The value can be <b>TCP</b> , <b>UDP_CONNECT</b> , <b>HTTP</b> , or <b>HTTPS</b> .<br><b>Default value:</b> N/A |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| url_path  | No        | String | <b>Definition:</b> Specifies the HTTP request path for the health check. The value must start with a slash (/).<br><b>Constraints:</b> This parameter is available only when <b>type</b> is set to <b>HTTP</b> or <b>HTTPS</b> .<br><b>Range:</b> The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set: _~!()*[]@\$^',+.<br><b>Default value:</b> / |

**Table 5-782** ConnectionDrain

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | No        | Boolean | <b>Definition:</b> Specifies whether to enable <b>connection_drain</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A |
| timeout   | No        | Integer | <b>Definition:</b> Specifies the deregistration delay timeout, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> 10 to 4000<br><b>Constraints:</b> N/A                                                                               |



**Table 5-783** QuicCidHashStrategy

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                             |
|-----------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| len       | Yes       | Integer | <b>Definition:</b> Specifies the length of the hash factor in the connection ID.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 1 to 20<br><b>Default value:</b> 3         |
| offset    | Yes       | Integer | <b>Definition:</b> Specifies the start position in the connection ID as the hash factor.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 0 to 19<br><b>Default value:</b> 1 |

## Response Parameters

Status code: 201

**Table 5-784** Response body parameters

| Parameter  | Type                          | Description                                                                                                                                                                          |
|------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                        | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| pool       | <b>MasterSlavePool</b> object | <b>Definition:</b> Specifies the backend server group.                                                                                                                               |

**Table 5-785** MasterSlavePool

| Parameter     | Type                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description   | String                                             | <b>Definition:</b> Specifies the supplementary information about the backend server group.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                 |
| id            | String                                             | <b>Definition:</b> Specifies the ID of the backend server group.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                           |
| lb_algorithm  | String                                             | <b>Definition:</b> Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN:</b> weighted round robin</li><li>• <b>LEAST_CONNECTIONS:</b> weighted least connections</li><li>• <b>SOURCE_IP:</b> source IP hash</li><li>• <b>QUIC_CID:</b> connection ID</li></ul> |
| listeners     | Array of <a href="#">ListenerRef</a> objects       | <b>Definition:</b> Specifies the IDs of the listeners with which the backend server group is associated.                                                                                                                                                                                                                                                                                                                        |
| loadbalancers | Array of <a href="#">LoadBalancerRef</a> objects   | <b>Definition:</b> Specifies the IDs of the load balancers with which the active/standby backend server group is associated.                                                                                                                                                                                                                                                                                                    |
| members       | Array of <a href="#">MasterSlaveMember</a> objects | <b>Definition:</b> Specifies the backend servers in the backend server group.                                                                                                                                                                                                                                                                                                                                                   |
| name          | String                                             | <b>Definition:</b> Specifies the backend server group name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                |
| project_id    | String                                             | <b>Definition:</b> Specifies the ID of the project where the backend server group is used.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                 |

| Parameter           | Type                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol            | String                                    | <b>Definition:</b> Specifies the protocol used by the backend server group to receive requests.<br><b>Range:</b> The value can be <b>TCP</b> , <b>UDP</b> , <b>QUIC</b> , or <b>TLS</b> .                                                                                                                                                                                                                                                                                        |
| session_persistence | <a href="#">SessionPersistence</a> object | <b>Definition:</b> Specifies the sticky session.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ip_version          | String                                    | <b>Definition:</b> Specifies the IP address version supported by the backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• Shared load balancers: The value is fixed at <b>v4</b>.</li><li>• Dedicated load balancers: The value can be <b>dualstack</b> or <b>v4</b>. If the protocol of the backend server group is TCP or UDP, the value is <b>dualstack</b>. If the protocol of the backend server group is HTTP, the value is <b>v4</b>.</li></ul> |
| created_at          | String                                    | <b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                                                                                                                      |
| updated_at          | String                                    | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                                                                                                                        |
| vpc_id              | String                                    | <b>Definition:</b> Specifies the ID of the VPC where the backend server group works.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                        |

| Parameter              | Type                                   | Description                                                                                                                                                                                                                                                                                                                                                                           |
|------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type                   | String                                 | <b>Definition:</b> Specifies the backend server group type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>instance:</b> Any type of backend servers can be added. <b>vpc_id</b> is mandatory.</li><li>• <b>ip:</b> Only IP as backend servers can be added. <b>vpc_id</b> cannot be specified.</li><li>• <b>"":</b> Any type of backend servers can be added.</li></ul> |
| enterprise_project_id  | String                                 | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul>                                                                                                     |
| healthmonitor          | <b>MasterSlaveHealthMonitor</b> object | <b>Definition:</b> Specifies the health check configured for the active/standby backend server group.                                                                                                                                                                                                                                                                                 |
| any_port_enable        | Boolean                                | <b>Definition:</b> Specifies whether to enable <b>any_port_enable</b> for a backend server group. If this option is enabled, the listener routes the requests to the backend server over the same port as the frontend port. If this option is disabled, the listener routes the requests over the port specified by <b>protocol_port</b> .<br><b>Range:</b> N/A                      |
| connection_drain       | <b>ConnectionDrain</b> object          | <b>Definition:</b> Specifies the configurations of deregistration delay.<br>This parameter takes effect when: <ul style="list-style-type: none"><li>• A backend server is removed from a backend server group.</li><li>• A backend server is detected unhealthy or health checks fail.</li><li>• The weight of a backend server is 0.</li></ul> <b>Range:</b> N/A                     |
| quic_cid_hash_strategy | <b>QuicCidHashStrategy</b> object      | <b>Definition:</b> Specifies multi-path distribution configuration based on destination connection IDs.                                                                                                                                                                                                                                                                               |

**Table 5-786** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

**Table 5-787** LoadBalancerRef

| Parameter | Type   | Description                                                             |
|-----------|--------|-------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A |

**Table 5-788** MasterSlaveMember

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                               |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the backend server ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                     |
| name           | String  | <b>Definition:</b> Specifies the backend server name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                |
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the backend server.<br>Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether ECSs exist. If ECSs exist, the value is <b>true</b> . Otherwise, the value is <b>false</b> .<br><b>Range:</b> <b>true</b> or <b>false</b> |

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| subnet_cidr_id | String  | <p>Specifies the ID of the IPv4 or IPv6 subnet where the backend server works.</p> <p>If <b>ip_target_enable</b> is set to <b>true</b>, this parameter can be left blank, indicating that an IP as backend server will be added. In this case, IP as backend servers must use private IPv4 addresses, and the protocol of the backend server group must be TCP, UDP, TLS, HTTP, HTTPS, QUIC, or GRPC.</p> <p><b>Range:</b> N/A</p>                                                                                                                                                         |
| protocol_port  | Integer | <p><b>Definition:</b> Specifies the port used by the backend server to receive requests.</p> <p><b>NOTE</b><br/>This parameter can be left blank because it does not take effect if <b>any_port_enable</b> is set to <b>true</b> for a backend server group.</p>                                                                                                                                                                                                                                                                                                                           |
| address        | String  | <p><b>Definition:</b> Specifies the IP address of the backend server</p> <p><b>Range:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| ip_version     | String  | <p><b>Definition:</b> Specifies the IP address version supported by the backend server. The version depends on the value of <b>address</b> returned by the system.</p> <p><b>Range:</b> v4 or v6</p>                                                                                                                                                                                                                                                                                                                                                                                       |
| device_owner   | String  | <p><b>Definition:</b> Specifies whether the backend server is associated with an ECS.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If this parameter is left blank, the backend server is not associated with an ECS.</li><li>• If the value is <b>compute:{az_name}</b>, the backend server is associated with an ECS. <b>{az_name}</b> indicates the AZ where the ECS resides.</li><li>• If the value is <b>compute:subeni</b>, supplementary network interfaces are added as backend servers.</li></ul> <p>This parameter is unsupported. Please do not use it.</p> |

| Parameter        | Type                                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------------|------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| device_id        | String                                               | <b>Definition:</b> Specifies the ID of the ECS with which the backend server is associated. If this parameter is left blank, the backend server is not associated with an ECS.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| operating_status | String                                               | <b>Definition:</b> Specifies the operating status of the backend server if <b>listener_id</b> under <b>status</b> is not specified.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>OFFLINE:</b> The cloud server used as the backend server is stopped or does not exist.</li><li>• <b>INITIAL:</b> Initial status of the backend server when health check is enabled.</li><li>• <b>UNKNOWN:</b> The backend server group is not associated with a listener or the backend server is not associated with an ECS.</li></ul> |
| reason           | <a href="#">MemberHealthCheckFailedReason</a> object | <b>Definition:</b> Specifies why the health check fails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| member_type      | String                                               | <b>Definition:</b> Specifies the type of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ip:</b> IP as backend servers</li><li>• <b>instance:</b> ECSs used as backend servers</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| instance_id      | String                                               | <b>Definition:</b> Specifies the ID of the instance associated with the backend server. If this parameter is left blank, the backend server is not a real device. It may be an IP address.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Parameter | Type                                                | Description                                                                                                                                                                                                                                                              |
|-----------|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| role      | String                                              | <b>Definition:</b> Specifies the type of the backend server.<br><b>Range:</b> N/A                                                                                                                                                                                        |
| status    | Array of <a href="#">ListenerMemberInfo</a> objects | <b>Definition:</b> Specifies the health status of the backend server if <b>listener_id</b> under <b>status</b> is specified. If <b>listener_id</b> under <b>status</b> is not specified, <b>operating_status</b> of <b>member</b> takes precedence.<br><b>Range:</b> N/A |



**Table 5-789** MemberHealthCheckFailedReason

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reason_code | String | <p><b>Definition:</b> Specifies the code of the health check failures.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>CONNECT_TIMEOUT:</b> The connection with the backend server times out during a health check.</li><li>• <b>CONNECT_REFUSED:</b> The load balancer rejects connections with the backend server during a health check.</li><li>• <b>CONNECT_FAILED:</b> The load balancer fails to establish connections with the backend server during a health check.</li><li>• <b>CONNECT_INTERRUPT:</b> The load balancer is disconnected from the backend server during a health check.</li><li>• <b>SSL_HANDSHAKE_ERROR:</b> The SSL handshakes with the backend server fail during a health check.</li><li>• <b>RECV_RESPONSE_FAILED:</b> The load balancer fails to receive responses from the backend server during a health check.</li><li>• <b>RECV_RESPONSE_TIMEOUT:</b> The load balancer does not receive responses from the backend server within the timeout duration during a health check.</li><li>• <b>SEND_REQUEST_FAILED:</b> The load balancer fails to send a health check request to the backend server during a health check.</li><li>• <b>SEND_REQUEST_TIMEOUT:</b> The load balancer fails to send a health check request to the backend server within the timeout duration.</li><li>• <b>RESPONSE_FORMAT_ERROR:</b> The load balancer receives invalid responses from the backend server during a health check.</li><li>• <b>RESPONSE_MISMATCH:</b> The response code received from the</li></ul> |

| Parameter            | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |        | backend server is different from the preset code.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| expected_response    | String | <p><b>Definition:</b> Specifies the expected HTTP status code. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b>, <b>HTTPS</b>, or <b>GRPC</b>. The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b>.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li><li>• A list of status codes that are separated with commas (,), for example, <b>200,202</b> or <b>0,1</b>. A maximum of five status codes are supported.</li><li>• A status code range. Different ranges are separated with commas (,), for example, <b>200-204,300-399</b> or <b>0-5,10-12,20-30</b>. A maximum of five ranges are supported.</li></ul> |
| healthcheck_response | String | <p><b>Definition:</b> Specifies the returned HTTP status code in the response. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b>, <b>HTTPS</b>, or <b>GRPC</b>. The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b>.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li></ul>                                                                                                                                                                                                                                                                                                                                     |

**Table 5-790** ListenerMemberInfo

| Parameter        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listener_id      | String | <b>Definition:</b> Specifies the ID of the listener associated with the backend server.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| operating_status | String | <b>Definition:</b> Specifies the operating status of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>OFFLINE:</b> The cloud server used as the backend server is stopped or does not exist.</li><li>• <b>INITIAL:</b> Initial status of the backend server when health check is enabled.</li><li>• <b>UNKNOWN:</b> The backend server group is not associated with a listener or the backend server is not associated with an ECS.</li></ul> |

**Table 5-791** SessionPersistence

| Parameter   | Type   | Description                                                                                                                           |
|-------------|--------|---------------------------------------------------------------------------------------------------------------------------------------|
| cookie_name | String | <b>Definition:</b> Specifies the cookie name.<br><b>Range:</b> The value can contain a maximum of 1,024 characters.                   |
| type        | String | <b>Definition:</b> Specifies the sticky session type.<br><b>Range:</b> <b>SOURCE_IP</b> , <b>HTTP_COOKIE</b> , or <b>APP_COOKIE</b> . |

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| persistence_timeout | Integer | <b>Definition:</b> Specifies the stickiness duration, in minutes. This parameter will not take effect when <b>type</b> is set to <b>APP_COOKIE</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>If the protocol of the backend server group is TCP, UDP, or QUIC, the value ranges from <b>1</b> to <b>60</b>, and the default value is <b>1</b>.</li><li>If the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>, and the default value is <b>1440</b>.</li></ul> |

**Table 5-792** MasterSlaveHealthMonitor

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                    |
|----------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the health check.<br><b>Range:</b> <ul style="list-style-type: none"><li><b>true:</b> The health check function is enabled.</li><li><b>false:</b> The health check function is disabled.</li></ul>                                   |
| delay          | Integer | <b>Definition:</b> Specifies the interval between health checks, in seconds.<br><b>Range:</b> <b>1</b> to <b>50</b>                                                                                                                                                                            |
| domain_name    | String  | <b>Definition:</b> Specifies the domain name that HTTP requests are sent to during the health check.<br><b>Range:</b> The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter.                                                          |
| expected_codes | String  | <b>Definition:</b> Specifies the expected HTTP status code.<br><b>Range:</b> <ul style="list-style-type: none"><li>A specific value, for example, 200</li><li>A list of values that are separated with commas (,), for example, 200, 202</li><li>A value range, for example, 200-204</li></ul> |

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                                                                                                 |
|------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| http_method      | String  | <b>Definition:</b> Specifies the HTTP method.<br><b>Range:</b> GET, HEAD, or POST                                                                                                                                                                                                                                                                                           |
| id               | String  | Specifies the health check ID.<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                 |
| max_retries      | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> .<br><b>Range:</b> 1 to 10                                                                                                                                                                               |
| max_retries_down | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> .<br><b>Range:</b> 1 to 10                                                                                                                                                                               |
| monitor_port     | Integer | Specifies the port used for the health check.<br><b>Range:</b> 1 to 65535                                                                                                                                                                                                                                                                                                   |
| name             | String  | <b>Definition:</b> Specifies the health check name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                    |
| timeout          | Integer | <b>Definition:</b> Specifies the maximum time required for waiting for a response from the health check, in seconds.<br><b>Range:</b> N/A                                                                                                                                                                                                                                   |
| type             | String  | <b>Definition:</b> Specifies the health check protocol.<br><b>Range:</b> The value can be <b>TCP</b> , <b>UDP_CONNECT</b> , <b>HTTP</b> , or <b>HTTPS</b> .                                                                                                                                                                                                                 |
| url_path         | String  | <b>Definition:</b> Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /.<br><b>Range:</b> The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set: _~!()*[]@\$^',+. |

**Table 5-793** ConnectionDrain

| Parameter | Type    | Description                                                                                                                                                                                                                                |
|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable <b>connection_drain</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A |
| timeout   | Integer | <b>Definition:</b> Specifies the deregistration delay timeout, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> 10 to 4000<br><b>Constraints:</b> N/A                                                                               |

**Table 5-794** QuicCidHashStrategy

| Parameter | Type    | Description                                                                                                                                                                                                                                             |
|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| len       | Integer | <b>Definition:</b> Specifies the length of the hash factor in the connection ID.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 1 to 20<br><b>Default value:</b> 3         |
| offset    | Integer | <b>Definition:</b> Specifies the start position in the connection ID as the hash factor.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 0 to 19<br><b>Default value:</b> 1 |

## Example Requests

```
POST https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/master-slave-pools
{
 "pool": {
 "name": "My pool",
 "lb_algorithm": "LEAST_CONNECTIONS",
 "listener_id": "0b11747a-b139-492f-9692-2df0b1c87193",
 "protocol": "TCP",
 "type": "ip",
```

```
"members" : [{
 "protocol_port" : 89,
 "name" : "My member",
 "address" : "120.10.10.16",
 "role" : "master"
}, {
 "protocol_port" : 89,
 "address" : "110.4.10.16",
 "role" : "slave"
}],
"healthmonitor" : {
 "name" : "My Healthmonitor",
 "max_retries" : 3,
 "type" : "HTTP",
 "timeout" : 30,
 "delay" : 1
}
}
```

## Example Responses

**Status code: 201**

Successful request.

```
{
 "pool" : {
 "name" : "master-slave-pool",
 "id" : "060dac1a-a139-4628-9b27-eee5930f7104",
 "description" : "",
 "lb_algorithm" : "ROUND_ROBIN",
 "protocol" : "TCP",
 "loadbalancers" : [{
 "id" : "696b9e7b-910f-4fbd-8d17-f9cb49fd222c"
 }],
 "type" : "instance",
 "project_id" : "0c1503d710984bad92306faea3654dfd",
 "session_persistence" : null,
 "listeners" : [{
 "id" : "0b11747a-b139-492f-9692-2df0b1c87193"
 }],
 "members" : [{
 "admin_state_up" : false,
 "address" : "192.168.255.56",
 "protocol_port" : 80,
 "id" : "b9ceb848-9715-4500-9463-72033151ed9a",
 "operating_status" : "OFFLINE",
 "status" : [{
 "listener_id" : "0b11747a-b139-492f-9692-2df0b1c87193",
 "operating_status" : "OFFLINE"
 }],
 "reason" : null,
 "instance_id" : "",
 "device_id" : "",
 "device_owner" : "",
 "member_type" : "instance",
 "role" : "master",
 "ip_version" : "v4",
 "name" : "",
 "subnet_cidr_id" : "b7e1fb40-74fd-4235-a83c-e0a07a9f2f44"
 }, {
 "admin_state_up" : false,
 "address" : "192.168.255.56",
 "protocol_port" : 81,
 "id" : "df025ce9-4a04-4249-9b9a-06e35c79436c",
 "operating_status" : "UNKNOWN",
 "reason" : null,
 "instance_id" : ""
 }
]
}
```

```
{
 "device_id" : "",
 "device_owner" : "",
 "member_type" : "instance",
 "role" : "slave",
 "ip_version" : "v4",
 "status" : [],
 "name" : "",
 "subnet_cidr_id" : "b7e1fb40-74fd-4235-a83c-e0a07a9f2f44"
}],
"enterprise_project_id" : "0",
"ip_version" : "dualstack",
"created_at" : "2024-09-11T04:08:02Z",
"updated_at" : "2024-09-11T04:08:02Z",
"healthmonitor" : {
 "monitor_port" : null,
 "id" : "bb84fcd5-a0bf-4516-b99c-d62274f1e28d",
 "domain_name" : "",
 "name" : "",
 "delay" : 5,
 "max_retries" : 10,
 "max_retries_down" : 3,
 "admin_state_up" : true,
 "timeout" : 50,
 "type" : "TCP",
 "expected_codes" : "200",
 "url_path" : "/",
 "http_method" : "GET"
},
"vpc_id" : "aa8a8149-1ae2-4f22-b035-30046308f1ac",
"connection_drain" : null,
"quic_cid_hash_strategy" : null,
"public_border_group" : "center",
"any_port_enable" : false
},
"request_id" : "2d974978-0733-404d-a21a-b29204f4803a"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

import java.util.List;
import java.util.ArrayList;

public class CreateMasterSlavePoolSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";
```



```
ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
CreateMasterSlavePoolRequest request = new CreateMasterSlavePoolRequest();
CreateMasterSlavePoolRequestBody body = new CreateMasterSlavePoolRequestBody();
CreateMasterSlaveHealthMonitorOption healthmonitorPool = new
CreateMasterSlaveHealthMonitorOption();
healthmonitorPool.withDelay(1)
 .withMaxRetries(3)
 .withName("My Healthmonitor")
 .withTimeout(30)
 .withType("HTTP");
List<CreateMasterSlaveMemberOption> listPoolMembers = new ArrayList<>();
listPoolMembers.add(
 new CreateMasterSlaveMemberOption()
 .withAddress("120.10.10.16")
 .withName("My member")
 .withProtocolPort(89)
 .withRole(CreateMasterSlaveMemberOption.RoleEnum.fromValue("master"))
);
listPoolMembers.add(
 new CreateMasterSlaveMemberOption()
 .withAddress("110.4.10.16")
 .withProtocolPort(89)
 .withRole(CreateMasterSlaveMemberOption.RoleEnum.fromValue("slave"))
);
CreateMasterSlavePoolOption poolbody = new CreateMasterSlavePoolOption();
poolbody.withLbAlgorithm("LEAST_CONNECTIONS")
 .withListenerId("0b11747a-b139-492f-9692-2df0b1c87193")
 .withName("My pool")
 .withProtocol("TCP")
 .withType("ip")
 .withMembers(listPoolMembers)
 .withHealthmonitor(healthmonitorPool);
body.withPool(poolbody);
request.withBody(body);
try {
 CreateMasterSlavePoolResponse response = client.createMasterSlavePool(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *
```

```
if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateMasterSlavePoolRequest()
 healthmonitorPool = CreateMasterSlaveHealthMonitorOption(
 delay=1,
 max_retries=3,
 name="My Healthmonitor",
 timeout=30,
 type="HTTP"
)
 listMembersPool = [
 CreateMasterSlaveMemberOption(
 address="120.10.10.16",
 name="My member",
 protocol_port=89,
 role="master"
),
 CreateMasterSlaveMemberOption(
 address="110.4.10.16",
 protocol_port=89,
 role="slave"
)
]
 poolbody = CreateMasterSlavePoolOption(
 lb_algorithm="LEAST_CONNECTIONS",
 listener_id="0b11747a-b139-492f-9692-2df0b1c87193",
 name="My pool",
 protocol="TCP",
 type="ip",
 members=listMembersPool,
 healthmonitor=healthmonitorPool
)
 request.body = CreateMasterSlavePoolRequestBody(
 pool=poolbody
)
 response = client.create_master_slave_pool(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
```

```
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.CreateMasterSlavePoolRequest{}
 nameHealthmonitor:= "My Healthmonitor"
 healthmonitorPool := &model.CreateMasterSlaveHealthMonitorOption{
 Delay: int32(1),
 MaxRetries: int32(3),
 Name: &nameHealthmonitor,
 Timeout: int32(30),
 Type: "HTTP",
 }
 nameMembers:= "My member"
 protocolPortMembers:= int32(89)
 protocolPortMembers1:= int32(89)
 var listMembersPool = []model.CreateMasterSlaveMemberOption{
 {
 Address: "120.10.10.16",
 Name: &nameMembers,
 ProtocolPort: &protocolPortMembers,
 Role: model.GetCreateMasterSlaveMemberOptionRoleEnum().MASTER,
 },
 {
 Address: "110.4.10.16",
 ProtocolPort: &protocolPortMembers1,
 Role: model.GetCreateMasterSlaveMemberOptionRoleEnum().SLAVE,
 },
 }
 listenerIdPool:= "0b11747a-b139-492f-9692-2df0b1c87193"
 namePool:= "My pool"
 poolbody := &model.CreateMasterSlavePoolOption{
 LbAlgorithm: "LEAST_CONNECTIONS",
 ListenerId: &listenerIdPool,
 Name: &namePool,
 Protocol: "TCP",
 Type: "ip",
 Members: listMembersPool,
 Healthmonitor: healthmonitorPool,
 }
 request.Body = &model.CreateMasterSlavePoolRequestBody{
 Pool: poolbody,
 }
 response, err := client.CreateMasterSlavePool(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

```
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 201         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.16.2 Querying Active/Standby Backend Server Groups

### Function

This API is used to query all active/standby backend server groups.

### Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query.
- Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/master-slave-pools

**Table 5-795** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

**Table 5-796** Query Parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker    | No        | String  | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| limit     | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000                                                                                                                                                                                                                                                                  |

| Parameter        | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|------------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse     | No        | Boolean          | <b>Definition:</b> Specifies whether to use reverse query.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true</b>: Query resources on the previous page.</li><li>• <b>false</b>: Query resources on the next page.</li></ul> <b>Default value:</b> false |
| description      | No        | Array of strings | <b>Definition:</b> Specifies the supplementary information about the backend server group.<br>Multiple descriptions can be used for query in the format of <i>description=xxx&amp;description=xx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                          |
| healthmonitor_id | No        | Array of strings | <b>Definition:</b> Specifies the ID of the health check configured for the backend server group.<br>Multiple IDs can be used for query in the format of <i>healthmonitor_id=xxx&amp;healthmonitor_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                  |

| Parameter       | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------|-----------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id              | No        | Array of strings | <b>Definition:</b> Specifies the ID of the backend server group.<br>Multiple IDs can be used for query in the format of <i>id=xxx&amp;id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                     |
| name            | No        | Array of strings | <b>Definition:</b> Specifies the name of the active/standby backend server group.<br>Multiple names can be used for query in the format of <i>name=xxx&amp;name=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                              |
| loadbalancer_id | No        | Array of strings | <b>Definition:</b> Specifies the ID of the load balancer with which the backend server group is associated.<br>Multiple IDs can be used for query in the format of <i>loadbalancer_id=xxx&amp;loadbalancer_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                |
| protocol        | No        | Array of strings | <b>Definition:</b> Specifies the protocol used by the backend server group to receive requests from the load balancer.<br>Multiple protocols can be used for query in the format of <i>protocol=xxx&amp;protocol=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>TCP</b> , <b>UDP</b> , <b>IP</b> , <b>TLS</b> , <b>HTTP</b> , <b>HTTPS</b> , <b>GRPC</b> , or <b>QUIC</b> .<br><b>Default value:</b> N/A |

| Parameter    | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| lb_algorithm | No        | Array of strings | <p><b>Definition:</b> Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.</p> <p>Multiple algorithms can be used for query in the format of <i>lb_algorithm=xxx&amp;lb_algorithm=xxx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN:</b> weighted round robin</li><li>• <b>LEAST_CONNECTIONS:</b> weighted least connections</li><li>• <b>SOURCE_IP:</b> source IP hash</li><li>• <b>QUIC_CID:</b> connection ID</li></ul> <p><b>Default value:</b> N/A</p> |



| Parameter             | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------|-----------|------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | Array of strings | <p><b>Definition:</b> Specifies the ID of the enterprise project.</p> <p>Multiple values can be used for query in the format of: <i>enterprise_project_id=xxx&amp;enterprise_project_id=xxx</i>.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enterprise_project_id</b> is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:poools:list</b> permission must be assigned to the user group.</li><li>• If <b>enterprise_project_id</b> is specified, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:poools:list</b> permission are queried.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |
| ip_version            | No        | Array of strings | <p><b>Definition:</b> Specifies the IP address version supported by the backend server group.</p> <p>Multiple versions can be used for query in the format of <i>ip_version=xxx&amp;ip_version=xxx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| Parameter        | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                              |
|------------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_address   | No        | Array of strings | <b>Definition:</b> Specifies the IP address of the backend server.<br>Multiple IP addresses can be used for query in the format of <i>member_address=xxx&amp;member_address=xxx</i> .<br><b>Constraints:</b> This is a query parameter and will not be included in the response.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                       |
| member_device_id | No        | Array of strings | <b>Definition:</b> Specifies the ID of the ECS that is associated with the load balancer as a backend server.<br>Multiple IDs can be used for query in the format of <i>member_device_id=xxx&amp;member_device_id=xxx</i> .<br><b>Constraints:</b> This is a query parameter and will not be included in the response.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| listener_id      | No        | Array of strings | <b>Definition:</b> Specifies the IDs of the associated listeners, including the listeners associated through forwarding policies.<br>Multiple IDs can be used for query in the format of <i>listener_id=xxx&amp;listener_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                       |

| Parameter          | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------|-----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_instance_id | No        | Array of strings | <b>Definition:</b> Specifies the backend server ID.<br>Multiple IDs can be used for query in the format of <i>member_instance_id=xxx&amp;member_instance_id=xxx</i> .<br><b>Constraints:</b> This is a query parameter and will not be included in the response.<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                |
| vpc_id             | No        | Array of strings | <b>Definition:</b> Specifies the ID of the VPC where the backend server group works.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                 |
| type               | No        | Array of strings | <b>Definition:</b> Specifies the type of the backend server group.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>instance:</b> Any type of backend servers can be added. <b>vpc_id</b> is mandatory.</li><li>• <b>ip:</b> Only IP as backend servers can be added. <b>vpc_id</b> cannot be specified.</li><li>• <b>"":</b> Any type of backend servers can be added.</li></ul> <b>Default value:</b> N/A |
| connection_drain   | No        | Boolean          | Specifies a <b>connection_drain</b> value for query, in the format of <b>connection_drain=true</b> or <b>connection_drain=false</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enabled) or <b>false</b> (disabled).<br><b>Default value:</b> N/A                                                                                                                                                                 |

## Request Parameters

**Table 5-797** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200**Table 5-798** Response body parameters

| Parameter  | Type                                    | Description                                                                                                                                                                          |
|------------|-----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                                  | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| page_info  | <b>PageInfo</b> object                  | <b>Definition:</b> Specifies the pagination information.                                                                                                                             |
| pools      | Array of <b>MasterSlavePool</b> objects | <b>Definition:</b> Specifies the backend server groups.                                                                                                                              |

**Table 5-799** PageInfo

| Parameter       | Type   | Description                                                                                                                                                                                                                          |
|-----------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |

| Parameter     | Type    | Description                                                                                                                                                         |
|---------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| next_marker   | String  | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A |
| current_count | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A                                                               |

**Table 5-800** MasterSlavePool

| Parameter     | Type                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description   | String                                             | <b>Definition:</b> Specifies the supplementary information about the backend server group.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                 |
| id            | String                                             | <b>Definition:</b> Specifies the ID of the backend server group.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                           |
| lb_algorithm  | String                                             | <b>Definition:</b> Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN:</b> weighted round robin</li><li>• <b>LEAST_CONNECTIONS:</b> weighted least connections</li><li>• <b>SOURCE_IP:</b> source IP hash</li><li>• <b>QUIC_CID:</b> connection ID</li></ul> |
| listeners     | Array of <a href="#">ListenerRef</a> objects       | <b>Definition:</b> Specifies the IDs of the listeners with which the backend server group is associated.                                                                                                                                                                                                                                                                                                                        |
| loadbalancers | Array of <a href="#">LoadBalancerRef</a> objects   | <b>Definition:</b> Specifies the IDs of the load balancers with which the active/standby backend server group is associated.                                                                                                                                                                                                                                                                                                    |
| members       | Array of <a href="#">MasterSlaveMember</a> objects | <b>Definition:</b> Specifies the backend servers in the backend server group.                                                                                                                                                                                                                                                                                                                                                   |

| Parameter           | Type                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name                | String                                    | <b>Definition:</b> Specifies the backend server group name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                 |
| project_id          | String                                    | <b>Definition:</b> Specifies the ID of the project where the backend server group is used.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                  |
| protocol            | String                                    | <b>Definition:</b> Specifies the protocol used by the backend server group to receive requests.<br><b>Range:</b> The value can be <b>TCP</b> , <b>UDP</b> , <b>QUIC</b> , or <b>TLS</b> .                                                                                                                                                                                                                                                                                        |
| session_persistence | <a href="#">SessionPersistence</a> object | <b>Definition:</b> Specifies the sticky session.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ip_version          | String                                    | <b>Definition:</b> Specifies the IP address version supported by the backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• Shared load balancers: The value is fixed at <b>v4</b>.</li><li>• Dedicated load balancers: The value can be <b>dualstack</b> or <b>v4</b>. If the protocol of the backend server group is TCP or UDP, the value is <b>dualstack</b>. If the protocol of the backend server group is HTTP, the value is <b>v4</b>.</li></ul> |
| created_at          | String                                    | <b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br><b>Note:</b> This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                                                                                                               |

| Parameter             | Type                                   | Description                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| updated_at            | String                                 | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                             |
| vpc_id                | String                                 | <b>Definition:</b> Specifies the ID of the VPC where the backend server group works.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                             |
| type                  | String                                 | <b>Definition:</b> Specifies the backend server group type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>instance:</b> Any type of backend servers can be added. <b>vpc_id</b> is mandatory.</li><li>• <b>ip:</b> Only IP as backend servers can be added. <b>vpc_id</b> cannot be specified.</li><li>• <b>"":</b> Any type of backend servers can be added.</li></ul> |
| enterprise_project_id | String                                 | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul>                                                                                                     |
| healthmonitor         | <b>MasterSlaveHealthMonitor</b> object | <b>Definition:</b> Specifies the health check configured for the active/standby backend server group.                                                                                                                                                                                                                                                                                 |

| Parameter              | Type                              | Description                                                                                                                                                                                                                                                                                                                                                       |
|------------------------|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| any_port_enable        | Boolean                           | <b>Definition:</b> Specifies whether to enable <b>any_port_enable</b> for a backend server group. If this option is enabled, the listener routes the requests to the backend server over the same port as the frontend port. If this option is disabled, the listener routes the requests over the port specified by <b>protocol_port</b> .<br><b>Range:</b> N/A  |
| connection_drain       | <b>ConnectionDrain</b> object     | <b>Definition:</b> Specifies the configurations of deregistration delay.<br>This parameter takes effect when: <ul style="list-style-type: none"><li>• A backend server is removed from a backend server group.</li><li>• A backend server is detected unhealthy or health checks fail.</li><li>• The weight of a backend server is 0.</li></ul> <b>Range:</b> N/A |
| quic_cid_hash_strategy | <b>QuicCidHashStrategy</b> object | <b>Definition:</b> Specifies multi-path distribution configuration based on destination connection IDs.                                                                                                                                                                                                                                                           |

**Table 5-801** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

**Table 5-802** LoadBalancerRef

| Parameter | Type   | Description                                                             |
|-----------|--------|-------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A |



**Table 5-803** MasterSlaveMember

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the backend server ID.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                |
| name           | String  | <b>Definition:</b> Specifies the backend server name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                           |
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the backend server.<br>Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether ECSs exist. If ECSs exist, the value is <b>true</b> . Otherwise, the value is <b>false</b> .<br><b>Range:</b> <b>true</b> or <b>false</b>                                                            |
| subnet_cidr_id | String  | Specifies the ID of the IPv4 or IPv6 subnet where the backend server works.<br>If <b>ip_target_enable</b> is set to <b>true</b> , this parameter can be left blank, indicating that an IP as backend server will be added. In this case, IP as backend servers must use private IPv4 addresses, and the protocol of the backend server group must be TCP, UDP, TLS, HTTP, HTTPS, QUIC, or GRPC.<br><b>Range:</b> N/A |
| protocol_port  | Integer | <b>Definition:</b> Specifies the port used by the backend server to receive requests.<br><b>NOTE</b><br>This parameter can be left blank because it does not take effect if <b>any_port_enable</b> is set to <b>true</b> for a backend server group.                                                                                                                                                                 |
| address        | String  | <b>Definition:</b> Specifies the IP address of the backend server<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                               |
| ip_version     | String  | <b>Definition:</b> Specifies the IP address version supported by the backend server. The version depends on the value of <b>address</b> returned by the system.<br><b>Range:</b> <b>v4</b> or <b>v6</b>                                                                                                                                                                                                              |

| Parameter        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| device_owner     | String | <p><b>Definition:</b> Specifies whether the backend server is associated with an ECS.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If this parameter is left blank, the backend server is not associated with an ECS.</li><li>• If the value is <b>compute:{az_name}</b>, the backend server is associated with an ECS. <b>{az_name}</b> indicates the AZ where the ECS resides.</li><li>• If the value is <b>compute:subeni</b>, supplementary network interfaces are added as backend servers.</li></ul> <p>This parameter is unsupported. Please do not use it.</p>                                                                                                                                                       |
| device_id        | String | <p><b>Definition:</b> Specifies the ID of the ECS with which the backend server is associated. If this parameter is left blank, the backend server is not associated with an ECS.</p> <p><b>Range:</b> N/A</p> <p>This parameter is unsupported. Please do not use it.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| operating_status | String | <p><b>Definition:</b> Specifies the operating status of the backend server if <b>listener_id</b> under <b>status</b> is not specified.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>OFFLINE:</b> The cloud server used as the backend server is stopped or does not exist.</li><li>• <b>INITIAL:</b> Initial status of the backend server when health check is enabled.</li><li>• <b>UNKNOWN:</b> The backend server group is not associated with a listener or the backend server is not associated with an ECS.</li></ul> |

| Parameter   | Type                                                 | Description                                                                                                                                                                                                                                                              |
|-------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reason      | <a href="#">MemberHealthCheckFailedReason</a> object | <b>Definition:</b> Specifies why the health check fails.                                                                                                                                                                                                                 |
| member_type | String                                               | <b>Definition:</b> Specifies the type of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ip:</b> IP as backend servers</li><li>• <b>instance:</b> ECSs used as backend servers</li></ul>                                                 |
| instance_id | String                                               | <b>Definition:</b> Specifies the ID of the instance associated with the backend server. If this parameter is left blank, the backend server is not a real device. It may be an IP address.<br><b>Range:</b> N/A                                                          |
| role        | String                                               | <b>Definition:</b> Specifies the type of the backend server.<br><b>Range:</b> N/A                                                                                                                                                                                        |
| status      | Array of <a href="#">ListenerMemberInfo</a> objects  | <b>Definition:</b> Specifies the health status of the backend server if <b>listener_id</b> under <b>status</b> is specified. If <b>listener_id</b> under <b>status</b> is not specified, <b>operating_status</b> of <b>member</b> takes precedence.<br><b>Range:</b> N/A |

**Table 5-804** MemberHealthCheckFailedReason

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reason_code | String | <p><b>Definition:</b> Specifies the code of the health check failures.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>CONNECT_TIMEOUT:</b> The connection with the backend server times out during a health check.</li><li>• <b>CONNECT_REFUSED:</b> The load balancer rejects connections with the backend server during a health check.</li><li>• <b>CONNECT_FAILED:</b> The load balancer fails to establish connections with the backend server during a health check.</li><li>• <b>CONNECT_INTERRUPT:</b> The load balancer is disconnected from the backend server during a health check.</li><li>• <b>SSL_HANDSHAKE_ERROR:</b> The SSL handshakes with the backend server fail during a health check.</li><li>• <b>RECV_RESPONSE_FAILED:</b> The load balancer fails to receive responses from the backend server during a health check.</li><li>• <b>RECV_RESPONSE_TIMEOUT:</b> The load balancer does not receive responses from the backend server within the timeout duration during a health check.</li><li>• <b>SEND_REQUEST_FAILED:</b> The load balancer fails to send a health check request to the backend server during a health check.</li><li>• <b>SEND_REQUEST_TIMEOUT:</b> The load balancer fails to send a health check request to the backend server within the timeout duration.</li><li>• <b>RESPONSE_FORMAT_ERROR:</b> The load balancer receives invalid responses from the backend server during a health check.</li><li>• <b>RESPONSE_MISMATCH:</b> The response code received from the</li></ul> |

| Parameter            | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |        | backend server is different from the preset code.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| expected_response    | String | <p><b>Definition:</b> Specifies the expected HTTP status code. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b>, <b>HTTPS</b>, or <b>GRPC</b>. The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b>.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li><li>• A list of status codes that are separated with commas (,), for example, <b>200,202</b> or <b>0,1</b>. A maximum of five status codes are supported.</li><li>• A status code range. Different ranges are separated with commas (,), for example, <b>200-204,300-399</b> or <b>0-5,10-12,20-30</b>. A maximum of five ranges are supported.</li></ul> |
| healthcheck_response | String | <p><b>Definition:</b> Specifies the returned HTTP status code in the response. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b>, <b>HTTPS</b>, or <b>GRPC</b>. The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b>.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li></ul>                                                                                                                                                                                                                                                                                                                                     |

**Table 5-805** ListenerMemberInfo

| Parameter        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listener_id      | String | <b>Definition:</b> Specifies the ID of the listener associated with the backend server.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| operating_status | String | <b>Definition:</b> Specifies the operating status of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>OFFLINE:</b> The cloud server used as the backend server is stopped or does not exist.</li><li>• <b>INITIAL:</b> Initial status of the backend server when health check is enabled.</li><li>• <b>UNKNOWN:</b> The backend server group is not associated with a listener or the backend server is not associated with an ECS.</li></ul> |

**Table 5-806** SessionPersistence

| Parameter   | Type   | Description                                                                                                                           |
|-------------|--------|---------------------------------------------------------------------------------------------------------------------------------------|
| cookie_name | String | <b>Definition:</b> Specifies the cookie name.<br><b>Range:</b> The value can contain a maximum of 1,024 characters.                   |
| type        | String | <b>Definition:</b> Specifies the sticky session type.<br><b>Range:</b> <b>SOURCE_IP</b> , <b>HTTP_COOKIE</b> , or <b>APP_COOKIE</b> . |

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| persistence_timeout | Integer | <b>Definition:</b> Specifies the stickiness duration, in minutes. This parameter will not take effect when <b>type</b> is set to <b>APP_COOKIE</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>If the protocol of the backend server group is TCP, UDP, or QUIC, the value ranges from <b>1</b> to <b>60</b>, and the default value is <b>1</b>.</li><li>If the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>, and the default value is <b>1440</b>.</li></ul> |

**Table 5-807** MasterSlaveHealthMonitor

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                    |
|----------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the health check.<br><b>Range:</b> <ul style="list-style-type: none"><li><b>true:</b> The health check function is enabled.</li><li><b>false:</b> The health check function is disabled.</li></ul>                                   |
| delay          | Integer | <b>Definition:</b> Specifies the interval between health checks, in seconds.<br><b>Range:</b> <b>1</b> to <b>50</b>                                                                                                                                                                            |
| domain_name    | String  | <b>Definition:</b> Specifies the domain name that HTTP requests are sent to during the health check.<br><b>Range:</b> The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter.                                                          |
| expected_codes | String  | <b>Definition:</b> Specifies the expected HTTP status code.<br><b>Range:</b> <ul style="list-style-type: none"><li>A specific value, for example, 200</li><li>A list of values that are separated with commas (,), for example, 200, 202</li><li>A value range, for example, 200-204</li></ul> |

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                                                                                                |
|------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| http_method      | String  | <b>Definition:</b> Specifies the HTTP method.<br><b>Range:</b> GET, HEAD, or POST                                                                                                                                                                                                                                                                                          |
| id               | String  | Specifies the health check ID.<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                |
| max_retries      | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> .<br><b>Range:</b> 1 to 10                                                                                                                                                                              |
| max_retries_down | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> .<br><b>Range:</b> 1 to 10                                                                                                                                                                              |
| monitor_port     | Integer | Specifies the port used for the health check.<br><b>Range:</b> 1 to 65535                                                                                                                                                                                                                                                                                                  |
| name             | String  | <b>Definition:</b> Specifies the health check name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                   |
| timeout          | Integer | <b>Definition:</b> Specifies the maximum time required for waiting for a response from the health check, in seconds.<br><b>Range:</b> N/A                                                                                                                                                                                                                                  |
| type             | String  | <b>Definition:</b> Specifies the health check protocol.<br><b>Range:</b> The value can be TCP, UDP_CONNECT, HTTP, or HTTPS.                                                                                                                                                                                                                                                |
| url_path         | String  | <b>Definition:</b> Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /.<br><b>Range:</b> The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set: _~!()*[]@\$^'+. |



**Table 5-808** ConnectionDrain

| Parameter | Type    | Description                                                                                                                                                                                                                                |
|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable <b>connection_drain</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A |
| timeout   | Integer | <b>Definition:</b> Specifies the deregistration delay timeout, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> 10 to 4000<br><b>Constraints:</b> N/A                                                                               |

**Table 5-809** QuicCidHashStrategy

| Parameter | Type    | Description                                                                                                                                                                                                                                             |
|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| len       | Integer | <b>Definition:</b> Specifies the length of the hash factor in the connection ID.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 1 to 20<br><b>Default value:</b> 3         |
| offset    | Integer | <b>Definition:</b> Specifies the start position in the connection ID as the hash factor.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 0 to 19<br><b>Default value:</b> 1 |

## Example Requests

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/master-slave-pools?limit=2
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "request_id": "cca2bccdfab04728d0653957bd7534bc",
 "pools": [{
 "name": "pool-1",
 "id": "060dac1a-a139-4628-9b27-eee5930f7104",
 "description": "",
 "lb_algorithm": "ROUND_ROBIN",
 "protocol": "TCP",
 "loadbalancers": [{
 "id": "696b9e7b-910f-4fbd-8d17-f9cb49fd222c"
 }],
 "type": "instance",
 "project_id": "0c1503d710984bad92306faea3654dfd",
 "session_persistence": null,
 "listeners": [],
 "members": [{
 "admin_state_up": false,
 "address": "192.168.255.56",
 "protocol_port": 80,
 "id": "b9ceb848-9715-4500-9463-72033151ed9a",
 "operating_status": "UNKNOWN",
 "reason": null,
 "instance_id": "",
 "device_id": "",
 "device_owner": "",
 "member_type": "instance",
 "role": "master",
 "ip_version": "v4",
 "status": [],
 "name": "",
 "subnet_cidr_id": "b7e1fb40-74fd-4235-a83c-e0a07a9f2f44"
 }], {
 "admin_state_up": false,
 "address": "192.168.255.56",
 "protocol_port": 81,
 "id": "df025ce9-4a04-4249-9b9a-06e35c79436c",
 "operating_status": "UNKNOWN",
 "reason": null,
 "instance_id": "",
 "device_id": "",
 "device_owner": "",
 "member_type": "instance",
 "role": "slave",
 "ip_version": "v4",
 "status": [],
 "name": "",
 "subnet_cidr_id": "b7e1fb40-74fd-4235-a83c-e0a07a9f2f44"
 }],
 "enterprise_project_id": "0",
 "ip_version": "dualstack",
 "created_at": "2024-09-11T04:08:02Z",
 "updated_at": "2024-09-11T04:08:02Z",
 "healthmonitor": {
 "monitor_port": null,
 "id": "bb84fcd5-a0bf-4516-b99c-d62274f1e28d",
 "domain_name": "",
 "name": "",
 "delay": 5,
 "max_retries": 10,
 "max_retries_down": 3,
 "admin_state_up": true,
 "timeout": 50,
 "type": "TCP",
 "expected_codes": "200",
 "url_path": "/",
 "http_method": "GET"
 },
 "vpc_id": "aa8a8149-1ae2-4f22-b035-30046308f1ac",
 "connection_drain": null,
```

```
"quic_cid_hash_strategy" : null,
"public_border_group" : "center",
"any_port_enable" : false
}, {
 "name" : "pool-2",
 "id" : "0ef4d313-d577-4e82-b48a-dc6fb1b7e665",
 "description" : "",
 "lb_algorithm" : "ROUND_ROBIN",
 "protocol" : "TCP",
 "loadbalancers" : [{
 "id" : "acac3f3b-e3a7-4ff5-be3d-234b810aac1e"
 }],
 "type" : "instance",
 "project_id" : "0c1503d710984bad92306faea3654dfd",
 "session_persistence" : null,
 "listeners" : [],
 "members" : [{
 "admin_state_up" : false,
 "address" : "192.168.0.110",
 "protocol_port" : 0,
 "id" : "65e43441-2569-4755-859e-511588061914",
 "operating_status" : "OFFLINE",
 "reason" : null,
 "instance_id" : "",
 "device_id" : "",
 "device_owner" : "",
 "member_type" : "instance",
 "role" : "slave",
 "ip_version" : "v4",
 "status" : [],
 "name" : "",
 "subnet_cidr_id" : "e59d4989-23c4-4cdd-9cf2-7e4285c3f305"
 }],
 {
 "admin_state_up" : false,
 "address" : "192.168.0.123",
 "protocol_port" : 0,
 "id" : "7f8ce034-191c-451c-957c-288ef4c00ab4",
 "operating_status" : "OFFLINE",
 "reason" : null,
 "instance_id" : "",
 "device_id" : "",
 "device_owner" : "",
 "member_type" : "instance",
 "role" : "master",
 "ip_version" : "v4",
 "status" : [],
 "name" : "",
 "subnet_cidr_id" : "e59d4989-23c4-4cdd-9cf2-7e4285c3f305"
 }],
 "enterprise_project_id" : "0",
 "ip_version" : "dualstack",
 "created_at" : "2024-06-04T09:05:24Z",
 "updated_at" : "2024-06-04T09:05:24Z",
 "healthmonitor" : {
 "monitor_port" : 403,
 "id" : "d6eca434-73a5-4016-ab10-210cd7e6b2e3",
 "domain_name" : "",
 "name" : "",
 "delay" : 5,
 "max_retries" : 10,
 "max_retries_down" : 3,
 "admin_state_up" : true,
 "timeout" : 50,
 "type" : "HTTP",
 "expected_codes" : "200",
 "url_path" : "/",
 "http_method" : "GET"
 },
 "vpc_id" : "60cb5110-771b-4459-89cd-becb303263fc",
```

```
"connection_drain" : null,
"quic_cid_hash_strategy" : null,
"public_border_group" : "center",
"any_port_enable" : true
}],
"page_info" : {
 "next_marker" : "0ef4d313-d577-4e82-b48a-dc6fb1b7e665",
 "previous_marker" : "060dac1a-a139-4628-9b27-eee5930f7104",
 "current_count" : 2
}
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListMasterSlavePoolsSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ListMasterSlavePoolsRequest request = new ListMasterSlavePoolsRequest();
 try {
 ListMasterSlavePoolsResponse response = client.listMasterSlavePools(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ListMasterSlavePoolsRequest()
 response = client.list_master_slave_pools(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
```

```
Build()

request := &model.ListMasterSlavePoolsRequest{
response, err := client.ListMasterSlavePools(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.16.3 Viewing the Details of an Active/Standby Backend Server Group

### Function

This API is used to view the details of an active/standby backend server group.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/master-slave-pools/{pool\_id}

**Table 5-810** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| pool_id    | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                     |

## Request Parameters

**Table 5-811** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-812** Response body parameters

| Parameter  | Type   | Description                                                                                                                                                                          |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

| Parameter | Type                                   | Description                                            |
|-----------|----------------------------------------|--------------------------------------------------------|
| pool      | <a href="#">MasterSlavePool</a> object | <b>Definition:</b> Specifies the backend server group. |

**Table 5-813** MasterSlavePool

| Parameter     | Type                                               | Description                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description   | String                                             | <b>Definition:</b> Specifies the supplementary information about the backend server group.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                 |
| id            | String                                             | <b>Definition:</b> Specifies the ID of the backend server group.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                           |
| lb_algorithm  | String                                             | <b>Definition:</b> Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN:</b> weighted round robin</li><li>• <b>LEAST_CONNECTIONS:</b> weighted least connections</li><li>• <b>SOURCE_IP:</b> source IP hash</li><li>• <b>QUIC_CID:</b> connection ID</li></ul> |
| listeners     | Array of <a href="#">ListenerRef</a> objects       | <b>Definition:</b> Specifies the IDs of the listeners with which the backend server group is associated.                                                                                                                                                                                                                                                                                                                        |
| loadbalancers | Array of <a href="#">LoadBalancerRef</a> objects   | <b>Definition:</b> Specifies the IDs of the load balancers with which the active/standby backend server group is associated.                                                                                                                                                                                                                                                                                                    |
| members       | Array of <a href="#">MasterSlaveMember</a> objects | <b>Definition:</b> Specifies the backend servers in the backend server group.                                                                                                                                                                                                                                                                                                                                                   |
| name          | String                                             | <b>Definition:</b> Specifies the backend server group name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                |



| Parameter           | Type                                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id          | String                                    | <b>Definition:</b> Specifies the ID of the project where the backend server group is used.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                  |
| protocol            | String                                    | <b>Definition:</b> Specifies the protocol used by the backend server group to receive requests.<br><b>Range:</b> The value can be <b>TCP</b> , <b>UDP</b> , <b>QUIC</b> , or <b>TLS</b> .                                                                                                                                                                                                                                                                                        |
| session_persistence | <a href="#">SessionPersistence</a> object | <b>Definition:</b> Specifies the sticky session.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| ip_version          | String                                    | <b>Definition:</b> Specifies the IP address version supported by the backend server group.<br><b>Range:</b> <ul style="list-style-type: none"><li>• Shared load balancers: The value is fixed at <b>v4</b>.</li><li>• Dedicated load balancers: The value can be <b>dualstack</b> or <b>v4</b>. If the protocol of the backend server group is TCP or UDP, the value is <b>dualstack</b>. If the protocol of the backend server group is HTTP, the value is <b>v4</b>.</li></ul> |
| created_at          | String                                    | <b>Definition:</b> Specifies the creation time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                                                                                                                      |
| updated_at          | String                                    | <b>Definition:</b> Specifies the update time. The value must be a UTC time in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A<br>Note: This parameter will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.                                                                                                                                        |

| Parameter             | Type                                            | Description                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------|-------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vpc_id                | String                                          | <b>Definition:</b> Specifies the ID of the VPC where the backend server group works.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                             |
| type                  | String                                          | <b>Definition:</b> Specifies the backend server group type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>instance:</b> Any type of backend servers can be added. <b>vpc_id</b> is mandatory.</li><li>• <b>ip:</b> Only IP as backend servers can be added. <b>vpc_id</b> cannot be specified.</li><li>• <b>"":</b> Any type of backend servers can be added.</li></ul> |
| enterprise_project_id | String                                          | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul>                                                                                                     |
| healthmonitor         | <a href="#">MasterSlaveHealthMonitor</a> object | <b>Definition:</b> Specifies the health check configured for the active/standby backend server group.                                                                                                                                                                                                                                                                                 |
| any_port_enable       | Boolean                                         | <b>Definition:</b> Specifies whether to enable <b>any_port_enable</b> for a backend server group. If this option is enabled, the listener routes the requests to the backend server over the same port as the frontend port. If this option is disabled, the listener routes the requests over the port specified by <b>protocol_port</b> .<br><b>Range:</b> N/A                      |

| Parameter              | Type                                       | Description                                                                                                                                                                                                                                                                                                                                                       |
|------------------------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| connection_drain       | <a href="#">ConnectionDrain</a> object     | <b>Definition:</b> Specifies the configurations of deregistration delay.<br>This parameter takes effect when: <ul style="list-style-type: none"><li>• A backend server is removed from a backend server group.</li><li>• A backend server is detected unhealthy or health checks fail.</li><li>• The weight of a backend server is 0.</li></ul> <b>Range:</b> N/A |
| quic_cid_hash_strategy | <a href="#">QuicCidHashStrategy</a> object | <b>Definition:</b> Specifies multi-path distribution configuration based on destination connection IDs.                                                                                                                                                                                                                                                           |

**Table 5-814** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

**Table 5-815** LoadBalancerRef

| Parameter | Type   | Description                                                             |
|-----------|--------|-------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A |

**Table 5-816** MasterSlaveMember

| Parameter | Type   | Description                                                                |
|-----------|--------|----------------------------------------------------------------------------|
| id        | String | Specifies the backend server ID.<br><b>Range:</b> N/A                      |
| name      | String | <b>Definition:</b> Specifies the backend server name.<br><b>Range:</b> N/A |

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the backend server.<br><br>Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether ECSs exist. If ECSs exist, the value is <b>true</b> . Otherwise, the value is <b>false</b> .<br><b>Range:</b> <b>true</b> or <b>false</b>                                                            |
| subnet_cidr_id | String  | Specifies the ID of the IPv4 or IPv6 subnet where the backend server works.<br><br>If <b>ip_target_enable</b> is set to <b>true</b> , this parameter can be left blank, indicating that an IP as backend server will be added. In this case, IP as backend servers must use private IPv4 addresses, and the protocol of the backend server group must be TCP, UDP, TLS, HTTP, HTTPS, QUIC, or GRPC.<br><b>Range:</b> N/A |
| protocol_port  | Integer | <b>Definition:</b> Specifies the port used by the backend server to receive requests.<br><b>NOTE</b><br>This parameter can be left blank because it does not take effect if <b>any_port_enable</b> is set to <b>true</b> for a backend server group.                                                                                                                                                                     |
| address        | String  | <b>Definition:</b> Specifies the IP address of the backend server<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                   |
| ip_version     | String  | <b>Definition:</b> Specifies the IP address version supported by the backend server. The version depends on the value of <b>address</b> returned by the system.<br><b>Range:</b> <b>v4</b> or <b>v6</b>                                                                                                                                                                                                                  |

| Parameter        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| device_owner     | String | <p><b>Definition:</b> Specifies whether the backend server is associated with an ECS.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• If this parameter is left blank, the backend server is not associated with an ECS.</li><li>• If the value is <b>compute:{az_name}</b>, the backend server is associated with an ECS. <b>{az_name}</b> indicates the AZ where the ECS resides.</li><li>• If the value is <b>compute:subeni</b>, supplementary network interfaces are added as backend servers.</li></ul> <p>This parameter is unsupported. Please do not use it.</p>                                                                                                                                                       |
| device_id        | String | <p><b>Definition:</b> Specifies the ID of the ECS with which the backend server is associated. If this parameter is left blank, the backend server is not associated with an ECS.</p> <p><b>Range:</b> N/A</p> <p>This parameter is unsupported. Please do not use it.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| operating_status | String | <p><b>Definition:</b> Specifies the operating status of the backend server if <b>listener_id</b> under <b>status</b> is not specified.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>OFFLINE:</b> The cloud server used as the backend server is stopped or does not exist.</li><li>• <b>INITIAL:</b> Initial status of the backend server when health check is enabled.</li><li>• <b>UNKNOWN:</b> The backend server group is not associated with a listener or the backend server is not associated with an ECS.</li></ul> |

| Parameter   | Type                                                 | Description                                                                                                                                                                                                                                                              |
|-------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reason      | <a href="#">MemberHealthCheckFailedReason</a> object | <b>Definition:</b> Specifies why the health check fails.                                                                                                                                                                                                                 |
| member_type | String                                               | <b>Definition:</b> Specifies the type of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ip:</b> IP as backend servers</li><li>• <b>instance:</b> ECSs used as backend servers</li></ul>                                                 |
| instance_id | String                                               | <b>Definition:</b> Specifies the ID of the instance associated with the backend server. If this parameter is left blank, the backend server is not a real device. It may be an IP address.<br><b>Range:</b> N/A                                                          |
| role        | String                                               | <b>Definition:</b> Specifies the type of the backend server.<br><b>Range:</b> N/A                                                                                                                                                                                        |
| status      | Array of <a href="#">ListenerMemberInfo</a> objects  | <b>Definition:</b> Specifies the health status of the backend server if <b>listener_id</b> under <b>status</b> is specified. If <b>listener_id</b> under <b>status</b> is not specified, <b>operating_status</b> of <b>member</b> takes precedence.<br><b>Range:</b> N/A |

**Table 5-817** MemberHealthCheckFailedReason

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| reason_code | String | <p><b>Definition:</b> Specifies the code of the health check failures.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>CONNECT_TIMEOUT:</b> The connection with the backend server times out during a health check.</li><li>• <b>CONNECT_REFUSED:</b> The load balancer rejects connections with the backend server during a health check.</li><li>• <b>CONNECT_FAILED:</b> The load balancer fails to establish connections with the backend server during a health check.</li><li>• <b>CONNECT_INTERRUPT:</b> The load balancer is disconnected from the backend server during a health check.</li><li>• <b>SSL_HANDSHAKE_ERROR:</b> The SSL handshakes with the backend server fail during a health check.</li><li>• <b>RECV_RESPONSE_FAILED:</b> The load balancer fails to receive responses from the backend server during a health check.</li><li>• <b>RECV_RESPONSE_TIMEOUT:</b> The load balancer does not receive responses from the backend server within the timeout duration during a health check.</li><li>• <b>SEND_REQUEST_FAILED:</b> The load balancer fails to send a health check request to the backend server during a health check.</li><li>• <b>SEND_REQUEST_TIMEOUT:</b> The load balancer fails to send a health check request to the backend server within the timeout duration.</li><li>• <b>RESPONSE_FORMAT_ERROR:</b> The load balancer receives invalid responses from the backend server during a health check.</li><li>• <b>RESPONSE_MISMATCH:</b> The response code received from the</li></ul> |

| Parameter            | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      |        | backend server is different from the preset code.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| expected_response    | String | <p><b>Definition:</b> Specifies the expected HTTP status code. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b>, <b>HTTPS</b>, or <b>GRPC</b>. The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b>.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li><li>• A list of status codes that are separated with commas (,), for example, <b>200,202</b> or <b>0,1</b>. A maximum of five status codes are supported.</li><li>• A status code range. Different ranges are separated with commas (,), for example, <b>200-204,300-399</b> or <b>0-5,10-12,20-30</b>. A maximum of five ranges are supported.</li></ul> |
| healthcheck_response | String | <p><b>Definition:</b> Specifies the returned HTTP status code in the response. This parameter will take effect only when <b>type</b> is set to <b>HTTP</b>, <b>HTTPS</b>, or <b>GRPC</b>. The status code cannot be <b>null</b> if <b>reason_code</b> is <b>RESPONSE_MISMATCH</b>.</p> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• A specific status code. If <b>type</b> is set to <b>GRPC</b>, the status code ranges from 0 to 99. If <b>type</b> is set to other values, the status code ranges from 200 to 599. For example, the status code can be <b>0</b> or <b>200</b>.</li></ul>                                                                                                                                                                                                                                                                                                                                     |



**Table 5-818** ListenerMemberInfo

| Parameter        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listener_id      | String | <b>Definition:</b> Specifies the ID of the listener associated with the backend server.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| operating_status | String | <b>Definition:</b> Specifies the operating status of the backend server.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The backend server is running normally.</li><li>• <b>NO_MONITOR:</b> No health check is configured for the backend server group to which the backend server belongs.</li><li>• <b>OFFLINE:</b> The cloud server used as the backend server is stopped or does not exist.</li><li>• <b>INITIAL:</b> Initial status of the backend server when health check is enabled.</li><li>• <b>UNKNOWN:</b> The backend server group is not associated with a listener or the backend server is not associated with an ECS.</li></ul> |

**Table 5-819** SessionPersistence

| Parameter   | Type   | Description                                                                                                                           |
|-------------|--------|---------------------------------------------------------------------------------------------------------------------------------------|
| cookie_name | String | <b>Definition:</b> Specifies the cookie name.<br><b>Range:</b> The value can contain a maximum of 1,024 characters.                   |
| type        | String | <b>Definition:</b> Specifies the sticky session type.<br><b>Range:</b> <b>SOURCE_IP</b> , <b>HTTP_COOKIE</b> , or <b>APP_COOKIE</b> . |

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| persistence_timeout | Integer | <b>Definition:</b> Specifies the stickiness duration, in minutes. This parameter will not take effect when <b>type</b> is set to <b>APP_COOKIE</b> .<br><b>Range:</b> <ul style="list-style-type: none"><li>If the protocol of the backend server group is TCP, UDP, or QUIC, the value ranges from <b>1</b> to <b>60</b>, and the default value is <b>1</b>.</li><li>If the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>, and the default value is <b>1440</b>.</li></ul> |

**Table 5-820** MasterSlaveHealthMonitor

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                    |
|----------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <b>Definition:</b> Specifies the administrative status of the health check.<br><b>Range:</b> <ul style="list-style-type: none"><li><b>true:</b> The health check function is enabled.</li><li><b>false:</b> The health check function is disabled.</li></ul>                                   |
| delay          | Integer | <b>Definition:</b> Specifies the interval between health checks, in seconds.<br><b>Range:</b> <b>1</b> to <b>50</b>                                                                                                                                                                            |
| domain_name    | String  | <b>Definition:</b> Specifies the domain name that HTTP requests are sent to during the health check.<br><b>Range:</b> The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter.                                                          |
| expected_codes | String  | <b>Definition:</b> Specifies the expected HTTP status code.<br><b>Range:</b> <ul style="list-style-type: none"><li>A specific value, for example, 200</li><li>A list of values that are separated with commas (,), for example, 200, 202</li><li>A value range, for example, 200-204</li></ul> |

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                                                                                                 |
|------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| http_method      | String  | <b>Definition:</b> Specifies the HTTP method.<br><b>Range:</b> GET, HEAD, or POST                                                                                                                                                                                                                                                                                           |
| id               | String  | Specifies the health check ID.<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                 |
| max_retries      | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> .<br><b>Range:</b> 1 to 10                                                                                                                                                                               |
| max_retries_down | Integer | <b>Definition:</b> Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> .<br><b>Range:</b> 1 to 10                                                                                                                                                                               |
| monitor_port     | Integer | Specifies the port used for the health check.<br><b>Range:</b> 1 to 65535                                                                                                                                                                                                                                                                                                   |
| name             | String  | <b>Definition:</b> Specifies the health check name.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                    |
| timeout          | Integer | <b>Definition:</b> Specifies the maximum time required for waiting for a response from the health check, in seconds.<br><b>Range:</b> N/A                                                                                                                                                                                                                                   |
| type             | String  | <b>Definition:</b> Specifies the health check protocol.<br><b>Range:</b> The value can be <b>TCP</b> , <b>UDP_CONNECT</b> , <b>HTTP</b> , or <b>HTTPS</b> .                                                                                                                                                                                                                 |
| url_path         | String  | <b>Definition:</b> Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /.<br><b>Range:</b> The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set: _~!()*[]@\$%^'+. |

**Table 5-821** ConnectionDrain

| Parameter | Type    | Description                                                                                                                                                                                                                                |
|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable <b>connection_drain</b> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can be <b>true</b> (enable this option) or <b>false</b> (disable this option).<br><b>Default value:</b> N/A |
| timeout   | Integer | <b>Definition:</b> Specifies the deregistration delay timeout, in seconds.<br><b>Constraints:</b> N/A<br><b>Range:</b> 10 to 4000<br><b>Constraints:</b> N/A                                                                               |

**Table 5-822** QuicCidHashStrategy

| Parameter | Type    | Description                                                                                                                                                                                                                                             |
|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| len       | Integer | <b>Definition:</b> Specifies the length of the hash factor in the connection ID.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 1 to 20<br><b>Default value:</b> 3         |
| offset    | Integer | <b>Definition:</b> Specifies the start position in the connection ID as the hash factor.<br><b>Constraints:</b> This parameter is valid only when the load balancing algorithm is <b>QUIC_CID</b> .<br><b>Range:</b> 0 to 19<br><b>Default value:</b> 1 |

## Example Requests

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/master-slave-pools/36ce7086-a496-4666-9064-5ba0e6840c75
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "pool" : {
 "name" : "master-slave-pool",
 "id" : "060dac1a-a139-4628-9b27-eee5930f7104",
 "description" : "",
 "lb_algorithm" : "ROUND_ROBIN",
 "protocol" : "TCP",
 "loadbalancers" : [{
 "id" : "696b9e7b-910f-4fbd-8d17-f9cb49fd222c"
 }],
 "type" : "instance",
 "project_id" : "0c1503d710984bad92306faea3654dfd",
 "session_persistence" : null,
 "listeners" : [{
 "id" : "0b11747a-b139-492f-9692-2df0b1c87193"
 }],
 "members" : [{
 "admin_state_up" : false,
 "address" : "192.168.255.56",
 "protocol_port" : 80,
 "id" : "b9ceb848-9715-4500-9463-72033151ed9a",
 "operating_status" : "OFFLINE",
 "status" : [{
 "listener_id" : "0b11747a-b139-492f-9692-2df0b1c87193",
 "operating_status" : "OFFLINE"
 }],
 "reason" : null,
 "instance_id" : "",
 "device_id" : "",
 "device_owner" : "",
 "member_type" : "instance",
 "role" : "master",
 "ip_version" : "v4",
 "name" : "",
 "subnet_cidr_id" : "b7e1fb40-74fd-4235-a83c-e0a07a9f2f44"
 }],
 {
 "admin_state_up" : false,
 "address" : "192.168.255.56",
 "protocol_port" : 81,
 "id" : "df025ce9-4a04-4249-9b9a-06e35c79436c",
 "operating_status" : "UNKNOWN",
 "reason" : null,
 "instance_id" : "",
 "device_id" : "",
 "device_owner" : "",
 "member_type" : "instance",
 "role" : "slave",
 "ip_version" : "v4",
 "status" : [],
 "name" : "",
 "subnet_cidr_id" : "b7e1fb40-74fd-4235-a83c-e0a07a9f2f44"
 }],
 "enterprise_project_id" : "0",
 "ip_version" : "dualstack",
 "created_at" : "2024-09-11T04:08:02Z",
 "updated_at" : "2024-09-11T04:08:02Z",
 "healthmonitor" : {
 "monitor_port" : null,
 "id" : "bb84fcd5-a0bf-4516-b99c-d62274f1e28d",
 "domain_name" : "",
 "name" : "",
 "delay" : 5,
 "max_retries" : 10,
 "max_retries_down" : 3,
 "admin_state_up" : true,
 "timeout" : 50,
 "type" : "TCP",
 "expected_codes" : "200",
 "url_path" : "/"
 }
 }
}
```

```
"http_method" : "GET"
},
"vpc_id" : "aa8a8149-1ae2-4f22-b035-30046308f1ac",
"connection_drain" : null,
"quic_cid_hash_strategy" : null,
"public_border_group" : "center",
"any_port_enable" : false
},
"request_id" : "2d974978-0733-404d-a21a-b29204f4803a"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowMasterSlavePoolSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowMasterSlavePoolRequest request = new ShowMasterSlavePoolRequest();
 request.withPoolId("{pool_id}");
 try {
 ShowMasterSlavePoolResponse response = client.showMasterSlavePool(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ShowMasterSlavePoolRequest()
 request.pool_id = "{pool_id}"
 response = client.show_master_slave_pool(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
```

```
WithCredential(auth).
Build())

request := &model.ShowMasterSlavePoolRequest{}
request.PoolId = "{pool_id}"
response, err := client.ShowMasterSlavePool(request)
if err == nil {
 fmt.Printf("%v\n", response)
} else {
 fmt.Println(err)
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.16.4 Deleting an Active/Standby Backend Server Group

### Function

This API is used to delete an active/standby backend server group.

### Constraints

Deleting an active/standby backend server group will also delete all its backend servers and health checks.

### Calling Method

For details, see [Calling APIs](#).

### URI

DELETE /v3/{project\_id}/elb/master-slave-pools/{pool\_id}



**Table 5-823** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| pool_id    | Yes       | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                     |

## Request Parameters

**Table 5-824** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 204**

Successful request.

None

## Example Requests

```
DELETE https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/master-slave-pools/36ce7086-a496-4666-9064-5ba0e6840c75
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeleteMasterSlavePoolSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 DeleteMasterSlavePoolRequest request = new DeleteMasterSlavePoolRequest();
 request.withPoolId("{pool_id}");
 try {
 DeleteMasterSlavePoolResponse response = client.deleteMasterSlavePool(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

### Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *
```

```
if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeleteMasterSlavePoolRequest()
 request.pool_id = "{pool_id}"
 response = client.delete_master_slave_pool(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.DeleteMasterSlavePoolRequest{
 request.PoolId = "{pool_id}"
 }
 response, err := client.DeleteMasterSlavePool(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

```
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

# 5.17 Log

## 5.17.1 Creating a Log

### Function

This API is used to create a log.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/elb/logtanks

**Table 5-825** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-826** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-827** Request body parameters

| Parameter | Mandatory | Type                                       | Description                                                                                        |
|-----------|-----------|--------------------------------------------|----------------------------------------------------------------------------------------------------|
| logtank   | Yes       | <a href="#">CreateLogtankOption</a> object | <b>Definition:</b> Specifies the request parameters for creating a log.<br><b>Constraints:</b> N/A |

**Table 5-828** CreateLogtankOption

| Parameter       | Mandatory | Type   | Description                                                                                                                     |
|-----------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                  |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| log_group_id | Yes       | String | <b>Definition:</b> Specifies the log group ID. This parameter is available for all services other than ELB.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                     |
| log_topic_id | Yes       | String | <b>Definition:</b> Specifies the ID of the log subscription topic. This parameter is available for all services other than ELB.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

Status code: 201

Table 5-829 Response body parameters

| Parameter  | Type                           | Description                                                                                                                                                                          |
|------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| logtank    | <a href="#">Logtank</a> object | <b>Definition:</b> Provides supplementary information.                                                                                                                               |
| request_id | String                         | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

Table 5-830 Logtank

| Parameter | Type   | Description                                                   |
|-----------|--------|---------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the log ID.<br><b>Range:</b> N/A |

| Parameter       | Type   | Description                                                                                                                                                                                                                                        |
|-----------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters. |
| loadbalancer_id | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A                                                                                                                                                                            |
| log_group_id    | String | <b>Definition:</b> Specifies the log group ID.<br><b>Range:</b> N/A                                                                                                                                                                                |
| log_topic_id    | String | <b>Definition:</b> Specifies the log topic ID.<br><b>Range:</b> N/A                                                                                                                                                                                |

## Example Requests

Creating a log for a load balancer

```
POST https://{ELB_Endpoint}/v3/060576798a80d5762fafc01a9b5eedc7/elb/logtanks
{
 "logtank" : {
 "log_topic_id" : "5b9b8370-a1fc-4c59-a509-483a673c8a94",
 "log_group_id" : "7733882e-f7fa-4fb0-a460-0605c48a2280",
 "loadbalancer_id" : "47ecc304-3f1a-4cc6-9c1c-72add483b9ce"
 }
}
```

## Example Responses

**Status code: 201**

Created

```
{
 "request_id" : "c5aea69b657295bef71cd05da2959206",
 "logtank" : {
 "project_id" : "060576798a80d5762fafc01a9b5eedc7",
 "log_topic_id" : "5b9b8370-a1fc-4c59-a509-483a673c8a94",
 "id" : "603e507f-3e18-498b-9460-01a3b6c28fc5",
 "log_group_id" : "7733882e-f7fa-4fb0-a460-0605c48a2280",
 "loadbalancer_id" : "47ecc304-3f1a-4cc6-9c1c-72add483b9ce"
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

Creating a log for a load balancer

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class CreateLogtankSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 CreateLogtankRequest request = new CreateLogtankRequest();
 CreateLogtankRequestBody body = new CreateLogtankRequestBody();
 CreateLogtankOption logtankbody = new CreateLogtankOption();
 logtankbody.withLoadbalancerId("47ecc304-3f1a-4cc6-9c1c-72add483b9ce")
 .withLogGroupId("7733882e-f7fa-4fb0-a460-0605c48a2280")
 .withLogTopicId("5b9b8370-a1fc-4c59-a509-483a673c8a94");
 body.withLogtank(logtankbody);
 request.withBody(body);
 try {
 CreateLogtankResponse response = client.createLogtank(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

### Creating a log for a load balancer

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *
```



```
if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = CreateLogtankRequest()
 logtankbody = CreateLogtankOption(
 loadbalancer_id="47ecc304-3f1a-4cc6-9c1c-72add483b9ce",
 log_group_id="7733882e-f7fa-4fb0-a460-0605c48a2280",
 log_topic_id="5b9b8370-a1fc-4c59-a509-483a673c8a94"
)
 request.body = CreateLogtankRequestBody(
 logtank=logtankbody
)
 response = client.create_logtank(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Creating a log for a load balancer

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
```

```
WithCredential(auth).
Build())

request := &model.CreateLogtankRequest{}
logtankbody := &model.CreateLogtankOption{
 LoadbalancerId: "47ecc304-3f1a-4cc6-9c1c-72add483b9ce",
 LogGroupId: "7733882e-f7fa-4fb0-a460-0605c48a2280",
 LogTopicId: "5b9b8370-a1fc-4c59-a509-483a673c8a94",
}
request.Body = &model.CreateLogtankRequestBody{
 Logtank: logtankbody,
}
response, err := client.CreateLogtank(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description |
|-------------|-------------|
| 201         | Created     |

## Error Codes

See [Error Codes](#).

## 5.17.2 Querying Logs

### Function

This API is used to query logs.

### Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query.
- Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

### Calling Method

For details, see [Calling APIs](#).

## URI

GET /v3/{project\_id}/elb/logtanks

**Table 5-831** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

**Table 5-832** Query Parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| limit     | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000                                                                                                                                                                                                                                                                  |
| marker    | No        | String  | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse | No        | Boolean | <p><b>Definition:</b> Specifies whether to use reverse query.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <p><b>Range:</b></p> <ul style="list-style-type: none"><li>• <b>true</b>: Query resources on the previous page.</li><li>• <b>false</b>: Query resources on the next page.</li></ul> <p><b>Default value:</b> false</p> |

| Parameter             | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------------|-----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | Array of strings | <p><b>Definition:</b> Specifies the ID of the enterprise project.</p> <p>Multiple values can be used for query in the format of: <i>enterprise_project_id=xxx&amp;enterprise_project_id=xxx</i>.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enterprise_project_id</b> is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:logtanks:list</b> permission must be assigned to the user group.</li><li>• If <b>enterprise_project_id</b> is specified, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:logtanks:list</b> permission are queried.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |
| id                    | No        | Array of strings | <p><b>Definition:</b> Specifies the ID of the log tank.</p> <p>Multiple IDs can be used for query in the format of <i>id=xxx&amp;id=xxx</i>.</p> <p><b>Constraints:</b> N/A</p> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

| Parameter       | Mandatory | Type             | Description                                                                                                                                                                                                                                        |
|-----------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer_id | No        | Array of strings | <b>Definition:</b> Specifies the ID of the load balancer.<br>Multiple IDs can be used for query in the format of <i>loadbalancer_id=xxx&amp;loadbalancer_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |
| log_group_id    | No        | Array of strings | <b>Definition:</b> Specifies the log group ID.<br>Multiple IDs can be used for query in the format of <i>log_group_id=xxx&amp;log_group_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                  |
| log_topic_id    | No        | Array of strings | <b>Definition:</b> Specifies the log topic ID.<br>Multiple IDs can be used for query in the format of <i>log_topic_id=xxx&amp;log_topic_id=xxx</i> .<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                  |

## Request Parameters

**Table 5-833** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

Status code: 200

**Table 5-834** Response body parameters

| Parameter  | Type                                     | Description                                                                                                                                                                          |
|------------|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| logtanks   | Array of <a href="#">Logtank</a> objects | <b>Definition:</b> Provides supplementary information.                                                                                                                               |
| page_info  | <a href="#">PageInfo</a> object          | <b>Definition:</b> Specifies the pagination information.                                                                                                                             |
| request_id | String                                   | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-835** Logtank

| Parameter       | Type   | Description                                                                                                                                                                                                                                        |
|-----------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id              | String | <b>Definition:</b> Specifies the log ID.<br><b>Range:</b> N/A                                                                                                                                                                                      |
| project_id      | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters. |
| loadbalancer_id | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A                                                                                                                                                                            |
| log_group_id    | String | <b>Definition:</b> Specifies the log group ID.<br><b>Range:</b> N/A                                                                                                                                                                                |
| log_topic_id    | String | <b>Definition:</b> Specifies the log topic ID.<br><b>Range:</b> N/A                                                                                                                                                                                |

**Table 5-836** PageInfo

| Parameter       | Type    | Description                                                                                                                                                                                                                          |
|-----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String  | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |
| next_marker     | String  | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A                                                                  |
| current_count   | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A                                                                                                                                |

## Example Requests

Querying logs of multiple load balancers

```
GET https://{ELB_Endpoint}/v3/060576798a80d5762fafc01a9b5eedc7/elb/logtanks?loadbalancer_id=995b98d7-6010-4502-a91a-756f399088f8&loadbalancer_id=37e9c3e3-08a2-48e9-acee-431159a33cc2
```

## Example Responses

**Status code: 200**

OK

```
{
 "request_id" : "5b43d31cd5217ffca57c2c4177e1b1ee",
 "logtanks" : [{
 "project_id" : "060576798a80d5762fafc01a9b5eedc7",
 "log_topic_id" : "5b9b8370-a1fc-4c59-a509-483a673c8a94",
 "id" : "281e8768-94f9-45e9-9f3d-9fe2a122ad67",
 "log_group_id" : "7733882e-f7fa-4fb0-a460-0605c48a2280",
 "loadbalancer_id" : "995b98d7-6010-4502-a91a-756f399088f8"
 }],
 "page_info" : {
 "next_marker" : "281e8768-94f9-45e9-9f3d-9fe2a122ad67",
 "previous_marker" : "281e8768-94f9-45e9-9f3d-9fe2a122ad67",
 "current_count" : 1
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.



## Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListLogtanksSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ListLogtanksRequest request = new ListLogtanksRequest();
 try {
 ListLogtanksResponse response = client.listLogtanks(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
```

```
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

try:
 request = ListLogtanksRequest()
 response = client.list_logtanks(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ListLogtanksRequest{}
 response, err := client.ListLogtanks(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

### Status Codes

| Status Code | Description |
|-------------|-------------|
| 200         | OK          |

### Error Codes

See [Error Codes](#).

## 5.17.3 Viewing the Details of a Log

### Function

This API is used to view the details of a log.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/logtanks/{logtank\_id}

**Table 5-837** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| logtank_id | Yes       | String | <b>Definition:</b> Specifies the log ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                      |

## Request Parameters

**Table 5-838** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 200****Table 5-839** Response body parameters

| Parameter  | Type                           | Description                                                                                                                                                                          |
|------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                         | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| logtank    | <a href="#">Logtank</a> object | <b>Definition:</b> Provides supplementary information about the log.                                                                                                                 |

**Table 5-840** Logtank

| Parameter       | Type   | Description                                                                                                                                                                                                                                        |
|-----------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id              | String | <b>Definition:</b> Specifies the log ID.<br><b>Range:</b> N/A                                                                                                                                                                                      |
| project_id      | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters. |
| loadbalancer_id | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A                                                                                                                                                                            |

| Parameter    | Type   | Description                                                         |
|--------------|--------|---------------------------------------------------------------------|
| log_group_id | String | <b>Definition:</b> Specifies the log group ID.<br><b>Range:</b> N/A |
| log_topic_id | String | <b>Definition:</b> Specifies the log topic ID.<br><b>Range:</b> N/A |

## Example Requests

Viewing the details of a log

```
GET https://{ELB_Endpoint}/v3/060576798a80d5762fafc01a9b5eedc7/elb/logtanks/
603e507f-3e18-498b-9460-01a3b6c28fc5
```

## Example Responses

**Status code: 200**

OK

```
{
 "logtank" : {
 "project_id" : "060576798a80d5762fafc01a9b5eedc7",
 "log_topic_id" : "5b9b8370-a1fc-4c59-a509-483a673c8a94",
 "id" : "603e507f-3e18-498b-9460-01a3b6c28fc5",
 "log_group_id" : "7733882e-f7fa-4fb0-a460-0605c48a2280",
 "loadbalancer_id" : "47ecc304-3f1a-4cc6-9c1c-72add483b9ce"
 },
 "request_id" : "59662f86620f8fc09c908eed060a2f0e"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowLogtankSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 }
}
```

```
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();

ShowLogtankRequest request = new ShowLogtankRequest();
request.withLogtankId("{logtank_id}");
try {
 ShowLogtankResponse response = client.showLogtank(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ShowLogtankRequest()
 request.logtank_id = "{logtank_id}"
 response = client.show_logtank(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ShowLogtankRequest{}
 request.LogtankId = "{logtank_id}"
 response, err := client.ShowLogtank(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description |
|-------------|-------------|
| 200         | OK          |

## Error Codes

See [Error Codes](#).

## 5.17.4 Updating a Log

### Function

This API is used to update a log.

### Calling Method

For details, see [Calling APIs](#).

### URI

PUT /v3/{project\_id}/elb/logtanks/{logtank\_id}

**Table 5-841** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| logtank_id | Yes       | String | <b>Definition:</b> Specifies the log ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                      |

### Request Parameters

**Table 5-842** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |



**Table 5-843** Request body parameters

| Parameter | Mandatory | Type                                       | Description                                                                                        |
|-----------|-----------|--------------------------------------------|----------------------------------------------------------------------------------------------------|
| logtank   | Yes       | <a href="#">UpdateLogtankOption</a> object | <b>Definition:</b> Specifies the request parameters for updating a log.<br><b>Constraints:</b> N/A |

**Table 5-844** UpdateLogtankOption

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                  |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| log_group_id | No        | String | <b>Definition:</b> Specifies the log group ID. This parameter is available for all services other than ELB.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                     |
| log_topic_id | No        | String | <b>Definition:</b> Specifies the ID of the log subscription topic. This parameter is available for all services other than ELB.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-845** Response body parameters

| Parameter  | Type                           | Description                                                                                                                                                                          |
|------------|--------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String                         | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |
| logtank    | <a href="#">Logtank</a> object | <b>Definition:</b> Specifies the log information.<br><b>Range:</b> N/A                                                                                                               |

**Table 5-846** Logtank

| Parameter       | Type   | Description                                                                                                                                                                                                                                        |
|-----------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id              | String | <b>Definition:</b> Specifies the log ID.<br><b>Range:</b> N/A                                                                                                                                                                                      |
| project_id      | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters. |
| loadbalancer_id | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A                                                                                                                                                                            |
| log_group_id    | String | <b>Definition:</b> Specifies the log group ID.<br><b>Range:</b> N/A                                                                                                                                                                                |
| log_topic_id    | String | <b>Definition:</b> Specifies the log topic ID.<br><b>Range:</b> N/A                                                                                                                                                                                |

## Example Requests

Updating a log

```
PUT https://{ELB_Endpoint}/v3/060576798a80d5762fafc01a9b5eedc7/elb/logtanks/
603e507f-3e18-498b-9460-01a3b6c28fc5
```

```
{
 "logtank" : {
 "log_topic_id" : "5b9b8370-a1fc-4c59-a509-483a673c8a94",
 "log_group_id" : "7733882e-f7fa-4fb0-a460-0605c48a2280"
 }
}
```

## Example Responses

**Status code: 200**

OK

```
{
 "logtank" : {
 "project_id" : "060576798a80d5762fafc01a9b5eedc7",
 "log_topic_id" : "5b9b8370-a1fc-4c59-a509-483a673c8a94",
 "id" : "603e507f-3e18-498b-9460-01a3b6c28fc5",
 "log_group_id" : "7733882e-f7fa-4fb0-a460-0605c48a2280",
 "loadbalancer_id" : "47ecc304-3f1a-4cc6-9c1c-72add483b9ce"
 },
 "request_id" : "59662f86620f8fc09c908eed060a2f0e"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

#### Updating a log

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class UpdateLogtankSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();

 UpdateLogtankRequest request = new UpdateLogtankRequest();
 request.withLogtankId("{logtank_id}");
 UpdateLogtankRequestBody body = new UpdateLogtankRequestBody();
 UpdateLogtankOption logtankbody = new UpdateLogtankOption();
 logtankbody.withLogGroupId("7733882e-f7fa-4fb0-a460-0605c48a2280")
 .withLogTopicId("5b9b8370-a1fc-4c59-a509-483a673c8a94");
 body.withLogtank(logtankbody);
 request.withBody(body);
 try {
 UpdateLogtankResponse response = client.updateLogtank(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

### Updating a log

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskgelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskgelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = UpdateLogtankRequest()
 request.logtank_id = "{logtank_id}"
 logtankbody = UpdateLogtankOption(
 log_group_id="7733882e-f7fa-4fb0-a460-0605c48a2280",
 log_topic_id="5b9b8370-a1fc-4c59-a509-483a673c8a94"
)
 request.body = UpdateLogtankRequestBody(
 logtank=logtankbody
)
 response = client.update_logtank(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

### Updating a log

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
```

```
sk := os.Getenv("CLOUD_SDK_SK")
projectId := "{project_id}"

auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.UpdateLogtankRequest{}
request.LogtankId = "{logtank_id}"
logGroupIdLogtank:= "7733882e-f7fa-4fb0-a460-0605c48a2280"
logTopicIdLogtank:= "5b9b8370-a1fc-4c59-a509-483a673c8a94"
logtankbody := &model.UpdateLogtankOption{
 LogGroupId: &logGroupIdLogtank,
 LogTopicId: &logTopicIdLogtank,
}
request.Body = &model.UpdateLogtankRequestBody{
 Logtank: logtankbody,
}
response, err := client.UpdateLogtank(request)
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description |
|-------------|-------------|
| 200         | OK          |

## Error Codes

See [Error Codes](#).

## 5.17.5 Deleting a Log

### Function

This API is used to delete a log.

### Calling Method

For details, see [Calling APIs](#).

## URI

DELETE /v3/{project\_id}/elb/logtanks/{logtank\_id}

**Table 5-847** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| logtank_id | Yes       | String | <b>Definition:</b> Specifies the log ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                      |

## Request Parameters

**Table 5-848** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 204**

No Content

None

## Example Requests

Deleting a log

```
DELETE https://{ELB_Endpoint}/v3/060576798a80d5762fafc01a9b5eedc7/elb/logtanks/
603e507f-3e18-498b-9460-01a3b6c28fc5
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeleteLogtankSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 DeleteLogtankRequest request = new DeleteLogtankRequest();
 request.withLogtankId("{logtank_id}");
 try {
 DeleteLogtankResponse response = client.deleteLogtank(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeleteLogtankRequest()
 request.logtank_id = "{logtank_id}"
 response = client.delete_logtank(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
```



```
WithCredential(auth).
Build())

request := &model.DeleteLogtankRequest{}
request.LogtankId = "{logtank_id}"
response, err := client.DeleteLogtank(request)
if err == nil {
 fmt.Printf("%v\n", response)
} else {
 fmt.Println(err)
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description |
|-------------|-------------|
| 204         | No Content  |

## Error Codes

See [Error Codes](#).

# 5.18 Asynchronous Task

## 5.18.1 Querying the Asynchronous Tasks

### Function

This API is used to query the asynchronous tasks like copying or upgrading load balancers.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/jobs

**Table 5-849** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

**Table 5-850** Query Parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| limit     | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000                                                                                                                                                                                                                                                                  |
| marker    | No        | String  | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse | No        | Boolean | <b>Definition:</b> Specifies whether to use reverse query.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true</b>: Query resources on the previous page.</li><li>• <b>false</b>: Query resources on the next page.</li></ul> <b>Default value:</b> false |
| job_id       | No        | String  | <b>Definition:</b> Specifies the task ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| job_type     | No        | String  | <b>Definition:</b> Specifies the task type.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| status       | No        | String  | <b>Definition:</b> Specifies the task status.<br><b>Constraints:</b> N/A<br><b>Range:</b> INIT, RUNNING, FAIL, SUCCESS, ROLLBACKING, COMPLETE, ROLLBACK_FAIL, or CANCEL<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                         |
| error_code   | No        | String  | <b>Definition:</b> Specifies the task error code.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| resource_id | No        | String | <b>Definition:</b> Specifies the resource ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                 |
| project_id  | No        | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| begin_time  | No        | String | <b>Definition:</b> Specifies the time when the task started, in the format of <i>yyyy-MM-dd'T'HH:mm:ss</i> . The tasks that started on or after the specified time will be returned.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                          |

## Request Parameters

None

## Response Parameters

**Status code:** 200

**Table 5-851** Response body parameters

| Parameter | Type                                     | Description                                              |
|-----------|------------------------------------------|----------------------------------------------------------|
| jobs      | Array of <a href="#">MainJob</a> objects | <b>Definition:</b> Specifies the task list.              |
| page_info | <a href="#">PageInfo</a> object          | <b>Definition:</b> Specifies the pagination information. |

| Parameter  | Type   | Description                                                                                                                                                                          |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-852** MainJob

| Parameter   | Type                           | Description                                    |
|-------------|--------------------------------|------------------------------------------------|
| status      | String                         | Specifies the task status.                     |
| begin_time  | String                         | Specifies the time when the task was started.  |
| end_time    | String                         | Specifies the time when the task was ended.    |
| job_id      | String                         | Specifies the task ID.                         |
| job_type    | String                         | Specifies the task type.                       |
| error_code  | String                         | Specifies the task error code.                 |
| error_msg   | String                         | Specifies the task error message.              |
| project_id  | String                         | Specifies the project ID.                      |
| resource_id | String                         | <b>Definition:</b> Specifies the resource ID.  |
| sub_jobs    | Array of <b>SubJob</b> objects | <b>Definition:</b> Specifies the subtask list. |

**Table 5-853** SubJob

| Parameter  | Type   | Description                                   |
|------------|--------|-----------------------------------------------|
| status     | String | Specifies the task status.                    |
| begin_time | String | Specifies the time when the task was started. |
| end_time   | String | Specifies the time when the task was ended.   |
| job_id     | String | Specifies the task ID.                        |
| job_type   | String | Specifies the task type.                      |
| error_code | String | Specifies the task error code.                |

| Parameter   | Type                                         | Description                                                             |
|-------------|----------------------------------------------|-------------------------------------------------------------------------|
| error_msg   | String                                       | Specifies the task error message.                                       |
| project_id  | String                                       | Specifies the project ID.                                               |
| resource_id | String                                       | <b>Definition:</b> Specifies the resource ID.                           |
| entities    | Array of <a href="#">JobEntities</a> objects | <b>Definition:</b> Specifies the resource to be processed in a subtask. |

**Table 5-854** JobEntities

| Parameter     | Type   | Description                                                                                           |
|---------------|--------|-------------------------------------------------------------------------------------------------------|
| resource_id   | String | <b>Definition:</b> Specifies the ID of the resource associated with a subtask.<br><b>Range:</b> N/A   |
| resource_type | String | <b>Definition:</b> Specifies the type of the resource associated with a subtask.<br><b>Range:</b> N/A |

**Table 5-855** PageInfo

| Parameter       | Type    | Description                                                                                                                                                                                                                          |
|-----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String  | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |
| next_marker     | String  | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A                                                                  |
| current_count   | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A                                                                                                                                |

## Example Requests

```
https://{ELB_Endpoint}/v3/7b7705dce1e847b08b3b16dda67fec24/elb/jobs
```

## Example Responses

Status code: 200

Query succeeded.

```
{
 "request_id" : "029f8cca-4d92-4b3e-9370-b36d382f969b",
 "jobs" : [{
 "status" : "COMPLETE",
 "begin_time" : "2024-03-23T08:20:42Z",
 "end_time" : "2024-03-23T08:49:11Z",
 "job_id" : "ef6da45b-35d9-4c18-8c35-0b80d94ab9e6",
 "resource_id" : "9f5b432c-987e-4777-a1bc-6642be4b2b50",
 "job_type" : "UPGRADE",
 "error_code" : "",
 "error_msg" : "",
 "project_id" : "7b7705dce1e847b08b3b16dda67fec24",
 "sub_jobs" : [{
 "status" : "SUCCESS",
 "entities" : [{
 "resource_id" : "9f5b432c-987e-4777-a1bc-6642be4b2b50",
 "resource_type" : "loadbalancer"
 }],
 "begin_time" : "2024-03-23T08:47:11Z",
 "end_time" : "2024-03-23T08:47:11Z",
 "job_id" : "481a5ab3-b3ff-46fa-b074-d3b8e09ab9cb",
 "resource_id" : "9f5b432c-987e-4777-a1bc-6642be4b2b50",
 "job_type" : "UPGRADE_TRAFFIC_SWITCH",
 "error_code" : "",
 "error_msg" : "",
 "project_id" : "7b7705dce1e847b08b3b16dda67fec24"
 }],
 "status" : "SUCCESS",
 "entities" : [{
 "resource_id" : "9f5b432c-987e-4777-a1bc-6642be4b2b50",
 "resource_type" : "loadbalancer"
 }],
 "begin_time" : "2024-03-23T08:20:42Z",
 "end_time" : "2024-03-23T08:46:44Z",
 "job_id" : "c4cf4e5b-fa53-427d-ad43-497e7a876c2e",
 "resource_id" : "9f5b432c-987e-4777-a1bc-6642be4b2b50",
 "job_type" : "UPGRADE_INIT",
 "error_code" : "",
 "error_msg" : "",
 "project_id" : "7b7705dce1e847b08b3b16dda67fec24"
 }],
 "page_info" : {
 "previous_marker" : "ef6da45b-35d9-4c18-8c35-0b80d94ab9e6",
 "current_count" : 1
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListJobsSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ListJobsRequest request = new ListJobsRequest();
 try {
 ListJobsResponse response = client.listJobs(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

### Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
```



```
The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
variables and decrypted during use to ensure security.
In this example, AK and SK are stored in environment variables for authentication. Before running this
example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

try:
 request = ListJobsRequest()
 response = client.list_jobs(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ListJobsRequest{}
 response, err := client.ListJobs(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description      |
|-------------|------------------|
| 200         | Query succeeded. |

## Error Codes

See [Error Codes](#).

## 5.18.2 Querying the Status of an Asynchronous Task

### Function

This API is used to query the status of an asynchronous task like copying or upgrading a load balancer.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/jobs/{job\_id}

**Table 5-856** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| job_id     | Yes       | String | Specifies the task ID.                                                                                                                                                                                                                                                                                     |

## Request Parameters

None

## Response Parameters

Status code: 200

**Table 5-857** Response body parameters

| Parameter  | Type                  | Description                                                                                                                                                                          |
|------------|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| job        | <b>MainJob</b> object | <b>Definition:</b> Specifies the information about the asynchronous tasks such as copy tasks.                                                                                        |
| request_id | String                | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-858** MainJob

| Parameter   | Type                           | Description                                    |
|-------------|--------------------------------|------------------------------------------------|
| status      | String                         | Specifies the task status.                     |
| begin_time  | String                         | Specifies the time when the task was started.  |
| end_time    | String                         | Specifies the time when the task was ended.    |
| job_id      | String                         | Specifies the task ID.                         |
| job_type    | String                         | Specifies the task type.                       |
| error_code  | String                         | Specifies the task error code.                 |
| error_msg   | String                         | Specifies the task error message.              |
| project_id  | String                         | Specifies the project ID.                      |
| resource_id | String                         | <b>Definition:</b> Specifies the resource ID.  |
| sub_jobs    | Array of <b>SubJob</b> objects | <b>Definition:</b> Specifies the subtask list. |

Table 5-859 SubJob

| Parameter   | Type                                         | Description                                                             |
|-------------|----------------------------------------------|-------------------------------------------------------------------------|
| status      | String                                       | Specifies the task status.                                              |
| begin_time  | String                                       | Specifies the time when the task was started.                           |
| end_time    | String                                       | Specifies the time when the task was ended.                             |
| job_id      | String                                       | Specifies the task ID.                                                  |
| job_type    | String                                       | Specifies the task type.                                                |
| error_code  | String                                       | Specifies the task error code.                                          |
| error_msg   | String                                       | Specifies the task error message.                                       |
| project_id  | String                                       | Specifies the project ID.                                               |
| resource_id | String                                       | <b>Definition:</b> Specifies the resource ID.                           |
| entities    | Array of <a href="#">JobEntities</a> objects | <b>Definition:</b> Specifies the resource to be processed in a subtask. |

Table 5-860 JobEntities

| Parameter     | Type   | Description                                                                                           |
|---------------|--------|-------------------------------------------------------------------------------------------------------|
| resource_id   | String | <b>Definition:</b> Specifies the ID of the resource associated with a subtask.<br><b>Range:</b> N/A   |
| resource_type | String | <b>Definition:</b> Specifies the type of the resource associated with a subtask.<br><b>Range:</b> N/A |

Example Requests

```
https://{ELB_Endpoint}/v3/7b7705dce1e847b08b3b16dda67fec24/elb/jobs/37d5c1fd-fa57-4c6d-bdcd-d523095c05e8
```

Example Responses

Status code: 200

Query succeeded.

```
{
 "job" : {
 "status" : "COMPLETE",
 "begin_time" : "2024-03-23T08:20:42Z",
```

```
"end_time" : "2024-03-23T08:49:11Z",
"job_id" : "ef6da45b-35d9-4c18-8c35-0b80d94ab9e6",
"resource_id" : "9f5b432c-987e-4777-a1bc-6642be4b2b50",
"job_type" : "UPGRADE",
"error_code" : "",
"error_msg" : "",
"project_id" : "7b7705dce1e847b08b3b16dda67fec24",
"sub_jobs" : [{
 "status" : "SUCCESS",
 "entities" : [{
 "resource_id" : "9f5b432c-987e-4777-a1bc-6642be4b2b50",
 "resource_type" : "loadbalancer"
 }],
 "begin_time" : "2024-03-23T08:47:11Z",
 "end_time" : "2024-03-23T08:47:11Z",
 "job_id" : "481a5ab3-b3ff-46fa-b074-d3b8e09ab9cb",
 "resource_id" : "9f5b432c-987e-4777-a1bc-6642be4b2b50",
 "job_type" : "UPGRADE_TRAFFIC_SWITCH",
 "error_code" : "",
 "error_msg" : "",
 "project_id" : "7b7705dce1e847b08b3b16dda67fec24"
}, {
 "status" : "SUCCESS",
 "entities" : [{
 "resource_id" : "9f5b432c-987e-4777-a1bc-6642be4b2b50",
 "resource_type" : "loadbalancer"
 }],
 "begin_time" : "2024-03-23T08:20:42Z",
 "end_time" : "2024-03-23T08:46:44Z",
 "job_id" : "c4cf4e5b-fa53-427d-ad43-497e7a876c2e",
 "resource_id" : "9f5b432c-987e-4777-a1bc-6642be4b2b50",
 "job_type" : "UPGRADE_INIT",
 "error_code" : "",
 "error_msg" : "",
 "project_id" : "7b7705dce1e847b08b3b16dda67fec24"
}, {
 "status" : "SUCCESS",
 "entities" : [{
 "resource_id" : "9f5b432c-987e-4777-a1bc-6642be4b2b50",
 "resource_type" : "loadbalancer"
 }],
 "begin_time" : "2024-03-23T08:49:11Z",
 "end_time" : "2024-03-23T08:49:11Z",
 "job_id" : "ee56e027-5d52-4bd9-abba-9821a742a466",
 "resource_id" : "9f5b432c-987e-4777-a1bc-6642be4b2b50",
 "job_type" : "UPGRADE_COMPLETE",
 "error_code" : "",
 "error_msg" : "",
 "project_id" : "7b7705dce1e847b08b3b16dda67fec24"
}]
},
"request_id" : "39551f69-3c49-4200-8ad3-73f9a8b4a3e4"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
```

```
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowJobSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowJobRequest request = new ShowJobRequest();
 request.withJobId("{job_id}");
 try {
 ShowJobResponse response = client.showJob(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.getenv("CLOUD_SDK_AK")
 sk = os.getenv("CLOUD_SDK_SK")
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
```

```
.build()

try:
 request = ShowJobRequest()
 request.job_id = "{job_id}"
 response = client.show_job(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ShowJobRequest{}
 request.JobId = "{job_id}"
 response, err := client.ShowJob(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

| Status Code | Description      |
|-------------|------------------|
| 200         | Query succeeded. |

Error Codes

See [Error Codes](#).

5.19 Feature Configuration

5.19.1 Querying the Feature Configurations of ELB

Function

This API is used to query the feature configurations of ELB of a tenant.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v3/{project\_id}/elb/feature/configs

Table 5-861 Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |



Table 5-862 Query Parameters

| Parameter | Mandatory | Type   | Description                                                                                                                 |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------|
| feature   | No        | String | <b>Definition:</b> Specifies the feature name.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

Request Parameters

None

Response Parameters

Status code: 200

Table 5-863 Response body parameters

| Parameter  | Type                                           | Description                                                                                                                                                                          |
|------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| configs    | Array of <a href="#">FeatureConfig</a> objects | <b>Definition:</b> Specifies the feature configuration list.                                                                                                                         |
| page_info  | <a href="#">PageInfo</a> object                | <b>Definition:</b> Specifies the pagination information.                                                                                                                             |
| request_id | String                                         | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

Table 5-864 FeatureConfig

| Parameter  | Type   | Description                                                             |
|------------|--------|-------------------------------------------------------------------------|
| id         | String | <b>Definition:</b> Specifies the configuration ID.<br><b>Range:</b> N/A |
| created_at | String | <b>Definition:</b> Specifies the creation time.<br><b>Range:</b> N/A    |
| updated_at | String | <b>Definition:</b> Specifies the update time.<br><b>Range:</b> N/A      |

| Parameter   | Type    | Description                                                                                                                                                                                                                                                                  |
|-------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| service     | String  | <b>Definition:</b> Specifies the service. The value is fixed at <b>ELB</b> .<br><b>Range:</b> N/A                                                                                                                                                                            |
| tenant_id   | String  | <b>Definition:</b> Specifies the tenant ID, which has the same meaning as that of <b>project_id</b> .<br><b>Range:</b> N/A                                                                                                                                                   |
| feature     | String  | <b>Definition:</b> Specifies the feature name.<br><b>Range:</b> N/A                                                                                                                                                                                                          |
| switch      | Boolean | <b>Definition:</b> Specifies whether to enable the feature configuration.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Enable the feature configuration.</li><li>• <b>false:</b> Disable the feature configuration.</li></ul>                       |
| type        | String  | <b>Definition:</b> Specifies the type of the feature configuration value. For example, <b>INT</b> indicates an integer.<br><b>Range:</b> N/A                                                                                                                                 |
| value       | String  | <b>Definition:</b> Specifies the feature configuration value. For example, the value <b>true</b> or <b>false</b> indicates that the feature is enabled or disabled. The feature value of the quota is an integer, indicating that the quota is limited.<br><b>Range:</b> N/A |
| description | String  | <b>Definition:</b> Specifies the feature configuration description.<br><b>Range:</b> N/A                                                                                                                                                                                     |
| caller      | String  | <b>Definition:</b> Specifies the configuration creator.<br><b>Range:</b> N/A                                                                                                                                                                                                 |

Table 5-865 PageInfo

| Parameter       | Type    | Description                                                                                                                                                                                                                          |
|-----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String  | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |
| next_marker     | String  | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A                                                                  |
| current_count   | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A                                                                                                                                |

Example Requests

https://{ELB\_Endpoint}/v3/7b7705dce1e847b08b3b16dda67fec24/elb/feature/configs

Example Responses

Status code: 200

Query succeeded.

```
{
 "request_id": "7d7874c9-9296-4337-bd97-93d69619f38e",
 "configs": [{
 "created_at": "2024-05-16T12:54:54Z",
 "updated_at": "2024-05-16T12:54:54Z",
 "id": "1911170d-27b0-4609-9ccd-f67fc3359092",
 "service": "ELB",
 "tenant_id": "0c1503d710984bad92306faea3654dfd",
 "feature": "feature.gates.batch_create_v2_loadbalancers_amount",
 "switch": true,
 "type": "INT",
 "value": "10",
 "description": "",
 "caller": "unknown"
 }],
 "page_info": {
 "previous_marker": "1911170d-27b0-4609-9ccd-f67fc3359092",
 "current_count": 1
 }
}
```

SDK Sample Code

The SDK sample code is as follows.

## Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListFeatureConfigsSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ListFeatureConfigsRequest request = new ListFeatureConfigsRequest();
 try {
 ListFeatureConfigsResponse response = client.listFeatureConfigs(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
```

```
ak = os.environ["CLOUD_SDK_AK"]
sk = os.environ["CLOUD_SDK_SK"]
projectId = "{project_id}"

credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

try:
 request = ListFeatureConfigsRequest()
 response = client.list_feature_configs(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbcClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ListFeatureConfigsRequest{}
 response, err := client.ListFeatureConfigs(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

Status Codes

| Status Code | Description      |
|-------------|------------------|
| 200         | Query succeeded. |

Error Codes

See [Error Codes](#).

5.19.2 Querying the Feature Configurations of a Load Balancer

Function

This API is used to query the feature configurations of a load balancer.

Calling Method

For details, see [Calling APIs](#).

URI

GET /v3/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/features

Table 5-866 Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                            |

### Request Parameters

None

### Response Parameters

Status code: 200

Table 5-867 Response body parameters

| Parameter  | Type                                                 | Description                                                                                                                                                                          |
|------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| features   | Array of <a href="#">LoadbalancerFeature</a> objects | <b>Definition:</b> Specifies the load balancer feature information list.                                                                                                             |
| request_id | String                                               | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

Table 5-868 LoadbalancerFeature

| Parameter | Type   | Description                                                                                                                                                                                                                                                    |
|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| feature   | String | <b>Definition:</b> Specifies the feature name.<br><b>Range:</b> N/A                                                                                                                                                                                            |
| type      | String | <b>Definition:</b> Specifies the type of the feature configuration value. For example, <b>INT</b> indicates an integer.<br><b>Range:</b> N/A                                                                                                                   |
| value     | String | <b>Definition:</b> Specifies the feature value. For example, the value <b>true</b> or <b>false</b> indicates that the feature is enabled or disabled. The feature value of the quota is an integer, indicating that the quota is limited.<br><b>Range:</b> N/A |

### Example Requests

```
https://{ELB_Endpoint}/v3/0c1503d710984bad92306faea3654dfd/elb/loadbalancers/6c9ddefb-c0c2-40fb-9505-0b4c81fac234/features
```

### Example Responses

Status code: 200

Query succeeded.

```
{
 "features": [{
 "feature": "update_elastic_flavor",
 "value": "true",
 "type": "BOOL"
 }, {
 "feature": "tcpsl",
 "value": "true",
 "type": "BOOL"
 }, {
 "feature": "dnat_forward_mode_enable",
 "value": "true",
 "type": "BOOL"
 }, {
 "feature": "upgrade_l4_resource_package",
 "value": "false",
 "type": "BOOL"
 }, {
 "feature": "upgrade_l7_resource_package",
 "value": "false",
 "type": "BOOL"
 }, {
 "feature": "l7policy_cors",
 "value": "true",
 "type": "BOOL"
 }, {
 "feature": "l7policy_traffic_limit",
 "value": "true",
 "type": "BOOL"
 }, {
 "feature": "listener_qos",
 "value": "true",
 "type": "BOOL"
 }, {
 "feature": "l7_traffic_mirror",
 "value": "true",
 "type": "BOOL"
 }, {
 "feature": "traffic_mirror_enable",
 "value": "true",
 "type": "BOOL"
 }, {
 "feature": "nat64_enable",
 "value": "true",
 "type": "BOOL"
 }, {
 "feature": "multi_eip",
 "value": "true",
 "type": "BOOL"
 }, {
 "feature": "multi_vip",
 "value": "true",
 "type": "BOOL"
 }],
 "request_id": "d8e8d908-1f54-46da-b254-45203bc1115d"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
```



```
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListLoadbalancerFeatureSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ListLoadbalancerFeatureRequest request = new ListLoadbalancerFeatureRequest();
 request.withLoadbalancerId("{loadbalancer_id}");
 try {
 ListLoadbalancerFeatureResponse response = client.listLoadbalancerFeature(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.getenv("CLOUD_SDK_AK")
 sk = os.getenv("CLOUD_SDK_SK")
 projectId = "{project_id}"
```

```
credentials = BasicCredentials(ak, sk, projectId)

client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

try:
 request = ListLoadbalancerFeatureRequest()
 request.loadbalancer_id = "{loadbalancer_id}"
 response = client.list_loadbalancer_feature(request)
 print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ListLoadbalancerFeatureRequest{}
 request.LoadbalancerId = "{loadbalancer_id}"
 response, err := client.ListLoadbalancerFeature(request)
 if err == nil {
 fmt.Printf("%v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description      |
|-------------|------------------|
| 200         | Query succeeded. |

## Error Codes

See [Error Codes](#).

# 5.20 Recycle Bin

## 5.20.1 Querying Load Balancers in the Recycle Bin

### Function

This API is used to query load balancers in the recycle bin.

### Constraints

This API has the following constraints:

- Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query.
- Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/recycle-bin/loadbalancers

**Table 5-869** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

**Table 5-870** Query Parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker    | No        | String  | <b>Definition:</b> Specifies the ID of the last record on the previous page.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If the parameter is not specified, only resources on the first page are queried.</li><li>• This parameter cannot be left blank or set to an invalid ID.</li></ul> <b>Range:</b> N/A<br><b>Default value:</b> N/A |
| limit     | No        | Integer | <b>Definition:</b> Specifies the number of records returned on each page.<br><b>Constraints:</b> N/A<br><b>Range:</b> 0 to 2000<br><b>Default value:</b> 2000                                                                                                                                                                                                                                                                  |

| Parameter      | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|-----------|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse   | No        | Boolean          | <b>Definition:</b> Specifies whether to use reverse query.<br><b>Constraints:</b> <ul style="list-style-type: none"><li>• This parameter must be used together with <b>limit</b>.</li><li>• If <b>page_reverse</b> is set to <b>true</b> and you want to query the resources on the previous page, set the value of <b>marker</b> to the value of <b>previous_marker</b>.</li></ul> <b>Range:</b> <ul style="list-style-type: none"><li>• <b>true</b>: Query resources on the previous page.</li><li>• <b>false</b>: Query resources on the next page.</li></ul> <b>Default value:</b> false |
| id             | No        | Array of strings | Specifies the load balancer ID. Multiple IDs can be used for query in the format of <i>id=xxx&amp;id=xxx</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| name           | No        | Array of strings | Specifies the load balancer name. Multiple names can be used for query in the format of <i>name=xxx&amp;name=xxx</i> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| description    | No        | Array of strings | Provides supplementary information about the load balancer. Multiple descriptions can be used for query in the format of <i>description=xxx&amp;description=xxx</i> .                                                                                                                                                                                                                                                                                                                                                                                                                        |
| admin_state_up | No        | Boolean          | <b>Definition:</b> Specifies whether the load balancer is enabled.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true</b>: enabled</li><li>• <b>false</b>: disabled</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                  |

| Parameter        | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                           |
|------------------|-----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | No        | Array of strings | <p>Specifies the operating status of the load balancer.</p> <p>Value options:</p> <ul style="list-style-type: none"><li>● <b>ONLINE</b>: The load balancer is working normally.</li><li>● <b>FROZEN</b>: The load balancer has been frozen.</li></ul> <p>Multiple operating statuses can be used for query in the format of <i>operating_status=xxx&amp;operating_status=xxx</i>.</p> |
| guaranteed       | No        | Boolean          | <p>Specifies whether the load balancer is a dedicated load balancer.</p> <ul style="list-style-type: none"><li>● <b>false</b>: The load balancer is a shared load balancer.</li><li>● <b>true</b>: The load balancer is a dedicated load balancer.</li></ul>                                                                                                                          |
| vpc_id           | No        | Array of strings | <p>Specifies the ID of the VPC where the load balancer resides.</p> <p>Multiple IDs can be used for query in the format of <i>vpc_id=xxx&amp;vpc_id=xxx</i>.</p>                                                                                                                                                                                                                      |
| vip_port_id      | No        | Array of strings | <p>Specifies the ID of the port bound to the private IPv4 address of the load balancer.</p> <p>Multiple IDs can be used for query in the format of <i>vip_port_id=xxx&amp;vip_port_id=xxx</i>.</p>                                                                                                                                                                                    |
| vip_address      | No        | Array of strings | <p>Specifies the IPv4 private IP address of the load balancer.</p> <p>Multiple IP addresses can be used for query in the format of <i>vip_address=xxx&amp;vip_address=xxx</i>.</p>                                                                                                                                                                                                    |

| Parameter                          | Mandatory | Type             | Description                                                                                                                                                                                      |
|------------------------------------|-----------|------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>vip_subnet_cidr_id</code>    | No        | Array of strings | Specifies the ID of the IPv4 subnet where the load balancer resides.<br><br>Multiple IDs can be used for query in the format of <i>vip_subnet_cidr_id=xxx&amp;vip_subnet_cidr_id=xxx</i> .       |
| <code>ipv6_vip_port_id</code>      | No        | Array of strings | Specifies the ID of the port bound to the IPv6 address of the load balancer.<br><br>Multiple ports can be used for query in the format of <i>ipv6_vip_port_id=xxx&amp;ipv6_vip_port_id=xxx</i> . |
| <code>ipv6_vip_address</code>      | No        | Array of strings | Specifies the IPv6 address bound to the load balancer.<br><br>Multiple IPv6 addresses can be used for query in the format of <i>ipv6_vip_address=xxx&amp;ipv6_vip_address=xxx</i> .              |
| <code>ipv6_vip_virsubnet_id</code> | No        | Array of strings | Specifies the ID of the IPv6 subnet where the load balancer resides.<br><br>Multiple IDs can be used for query in the format of <i>ipv6_vip_virsubnet_id=xxx&amp;ipv6_vip_virsubnet_id=xxx</i> . |

| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------|-----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| eips      | No        | Array of strings | <p>Specifies the IPv4 EIP bound to the load balancer. The following is an example:</p> <pre>"eips": [<br/>  {<br/>    "eip_id":<br/>    "e9b72a9d-4275-455e-<br/>a724-853504e4d9c6",<br/>    "eip_address": "88.88.14.122",<br/>    "ip_version": 4<br/>  }<br/>]</pre> <p>Multiple EIPs can be used for query.</p> <ul style="list-style-type: none"><li>• If <b>eip_id</b> is used as the query condition, the format is<br/><i>eips=eip_id=xxx&amp;eips=eip_id=xxx.</i></li><li>• If <b>eip_address</b> is used as the query condition, the format is<br/><i>eips=eip_address=xxx&amp;eips=eip_address=xxx.</i></li><li>• If <b>ip_version</b> is used as the query condition, the format is<br/><i>eips=ip_version=xxx&amp;eips=ip_version=xxx.</i></li></ul> <p>Note that this parameter has the same meaning as <b>publicips</b>.</p> |



| Parameter | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|-----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| publicips | No        | Array of strings | <p>Specifies the EIP bound to the load balancer. The following is an example:</p> <pre>"publicips=": [<br/>{<br/>  "public_id":<br/>    "e9b72a9d-4275-455e-<br/>a724-853504e4d9c6",<br/>  "public_address":<br/>    "88.88.14.122",<br/>  "ip_version": 4<br/>}<br/>]</pre> <p>If you want to query the load balancers that have the above EIP bound, you can use the following format:</p> <pre>publicips=ip_version<br/>%3D4&amp;publicips=public_addre<br/>ss<br/>%3D88.88.14.122&amp;publicips=p<br/>ublic_id<br/>%3De9b72a9d-4275-455e-<br/>a724-853504e4d9c6</pre> <p>Multiple values can be used for query in the format of:</p> <ul style="list-style-type: none"><li>• If <b>publicip_id</b> is used as the query condition, the format is<br/><i>publicips=publicip_id=xxx&amp;publicips=publicip_id=xxx.</i></li><li>• If <b>publicip_address</b> is used as the query condition, the format is<br/><i>publicips=publicip_address=xxx&amp;publicips=publicip_address=xxx.</i></li><li>• If <b>ip_version</b> is used as the query condition, the format is<br/><i>publicips=ip_version=xxx&amp;publicips=ip_version=xxx.</i></li></ul> <p>Note: This parameter has the same meaning as <b>eips</b>.</p> |

| Parameter              | Mandatory | Type             | Description                                                                                                                                                                                                                                                                  |
|------------------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| availability_zone_list | No        | Array of strings | Specifies the list of AZs where the load balancer is created.<br>Multiple AZs can be used for query in the format of <i>availability_zone_list=xxx&amp;availability_zone_list=xxx</i> .                                                                                      |
| l4_flavor_id           | No        | Array of strings | Specifies the ID of a flavor at Layer 4.<br>Multiple IDs can be used for query in the format of <i>l4_flavor_id=xxx&amp;l4_flavor_id=xxx</i> .                                                                                                                               |
| l7_flavor_id           | No        | Array of strings | Specifies the ID of a flavor at Layer 7.<br>Multiple flavors can be used for query in the format of <i>l7_flavor_id=xxx&amp;l7_flavor_id=xxx</i> .                                                                                                                           |
| billing_info           | No        | Array of strings | Provides resource billing information.<br>Multiple values can be used for query in the format of <i>billing_info=xxx&amp;billing_info=xxx</i> .<br>This parameter is unsupported. Please do not use it.                                                                      |
| member_device_id       | No        | Array of strings | Specifies the ID of the ECS that is associated with the load balancer as a backend server. This is a query parameter and will not be included in the response.<br>Multiple IDs can be used for query in the format of <i>member_device_id=xxx&amp;member_device_id=xxx</i> . |

| Parameter             | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------|-----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_address        | No        | Array of strings | <p>Specifies the private IP address of the ECS that is associated with the load balancer as a backend server. This is a query parameter and will not be included in the response.</p> <p>Multiple private IP addresses can be used for query in the format of <i>member_address=xxx&amp;member_address=xxx</i>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| enterprise_project_id | No        | Array of strings | <p><b>Definition:</b> Specifies the ID of the enterprise project where the load balancer is used.</p> <p>Multiple values can be used for query in the format of: <i>enterprise_project_id=xxx&amp;enterprise_project_id=xxx</i>.</p> <p><b>Constraints:</b></p> <ul style="list-style-type: none"><li>• If <b>enterprise_project_id</b> is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:loadbalancers:list</b> permission must be assigned to the user group.</li><li>• If <b>enterprise_project_id</b> is specified, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:loadbalancers:list</b> permission are queried.</li></ul> <p><b>Range:</b> N/A</p> <p><b>Default value:</b> N/A</p> |

| Parameter                  | Mandatory | Type              | Description                                                                                                                                                                                                                                                                                                                         |
|----------------------------|-----------|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_version                 | No        | Array of integers | Specifies the IP version. The value can be <b>4</b> (IPv4) or <b>6</b> (IPv6).<br>Multiple versions can be used for query in the format of <i>ip_version=xxx&amp;ip_version=xxx</i> .                                                                                                                                               |
| deletion_protection_enable | No        | Boolean           | <b>Definition:</b> Specifies whether to enable deletion protection.<br><b>Range:</b> <b>false</b> (disable this option) or <b>true</b> (enable this option).                                                                                                                                                                        |
| elb_virsubnet_type         | No        | Array of strings  | Specifies the type of the subnet on the downstream plane. <ul style="list-style-type: none"><li>• <b>ipv4:</b> IPv4 subnet</li><li>• <b>dualstack:</b> subnet that supports IPv4/IPv6 dual stack</li></ul> Multiple values can be used for query in the format of <i>elb_virsubnet_type=ipv4&amp;elb_virsubnet_type=dualstack</i> . |
| autoscaling                | No        | Array of strings  | Specifies whether to enable elastic scaling. Example:<br>"autoscaling": {<br>"enable": "true"<br>}<br>Multiple values can be used for query in the format of <i>autoscaling=enable=true&amp;autoscaling=enable=false</i> .                                                                                                          |
| protection_status          | No        | Array of strings  | Specifies the protection status. Value options: <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): The resource is not protected.</li><li>• <b>consoleProtection:</b> Modification is not allowed on the console.</li></ul>                                                                                    |

| Parameter    | Mandatory | Type             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------|-----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| global_eips  | No        | Array of strings | <p>Specifies the EIP bound to the load balancer. The following shows an example:</p> <pre>{<br/>  "global_eips": [<br/>    {<br/>      "global_eip_id":<br/>        "240000000-0000-0000-0000-1<br/>        000000000001",<br/>      "global_eip_address":<br/>        "10.10.10.10",<br/>      "ip_version": 4<br/>    }<br/>  ]<br/>}</pre> <p>Multiple values can be used for query in the format of:</p> <ul style="list-style-type: none"><li>• If <b>global_eip_id</b> is used as the query condition, the format is<br/><i>global_eips=global_eip_id=xxx&amp;global_eips=global_eip_id=xxx.</i></li><li>• If <b>global_eip_address</b> is used as the query condition, the format is<br/><i>global_eips=global_eip_address=xxx&amp;global_eips=global_eip_address=xxx.</i></li><li>• If <b>ip_version</b> is used as the query condition, the format is<br/><i>global_eips=ip_version=xxx&amp;global_eips=ip_version=xxx.</i></li></ul> |
| log_topic_id | No        | String           | <p>Specifies the ID of the log topic that is associated with the load balancer. Multiple IDs can be used for query in the format of<br/><i>log_topic_id=xxx&amp;log_topic_id=xxx.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                     |
|--------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| log_group_id | No        | String | Specifies the ID of the log group that is associated with the load balancer. Multiple IDs can be used for query in the format of <i>log_group_id=xxx&amp;log_group_id=xxx</i> . |

## Request Parameters

**Table 5-871** Request header parameters

| Parameter    | Mandatory | Type   | Description                                      |
|--------------|-----------|--------|--------------------------------------------------|
| X-Auth-Token | No        | String | Specifies the token used for IAM authentication. |

## Response Parameters

Status code: 200

**Table 5-872** Response body parameters

| Parameter     | Type                                                 | Description                                                                                                                                                                          |
|---------------|------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancers | Array of <a href="#">RecycleLoadBalancer</a> objects | <b>Definition:</b> Lists the load balancers in the recycle bin.<br><b>Range:</b> N/A                                                                                                 |
| page_info     | <a href="#">PageInfo</a> object                      | <b>Definition:</b> Specifies the pagination information.                                                                                                                             |
| request_id    | String                                               | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-). |

**Table 5-873** RecycleLoadBalancer

| Parameter | Type   | Description                                                             |
|-----------|--------|-------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Range:</b> N/A |

| Parameter           | Type                                | Description                                                                                                                                                                                                                                  |
|---------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| auto_terminate_time | String                              | <b>Definition:</b> Specifies the time when the load balancers in the recycle bin will be permanently deleted, in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .<br><b>Range:</b> N/A                                                        |
| description         | String                              | <b>Definition:</b> Provides supplementary information about the load balancer.<br><b>Range:</b> N/A                                                                                                                                          |
| provisioning_status | String                              | <b>Definition:</b> Specifies the provisioning status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>RECYCLING:</b> The load balancer is kept in the recycle bin.</li></ul>                                |
| admin_state_up      | Boolean                             | <b>Definition:</b> Specifies whether the load balancer is enabled.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> enabled</li><li>• <b>false:</b> disabled</li></ul>                                                  |
| provider            | String                              | <b>Definition:</b> Specifies the provider of the load balancer. The value is fixed to <b>vlb</b> .<br><b>Range:</b> N/A                                                                                                                      |
| pools               | Array of <b>PoolRef</b> objects     | <b>Definition:</b> Lists the IDs of backend server groups associated with the load balancer.                                                                                                                                                 |
| listeners           | Array of <b>ListenerRef</b> objects | <b>Definition:</b> Lists the IDs of listeners associated with the load balancer.                                                                                                                                                             |
| operating_status    | String                              | <b>Definition:</b> Specifies the operating status of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ONLINE:</b> The load balancer is online.</li><li>• <b>FROZEN:</b> The load balancer is frozen.</li></ul> |
| name                | String                              | <b>Definition:</b> Specifies the load balancer name.<br><b>Range:</b> N/A                                                                                                                                                                    |

| Parameter          | Type                                 | Description                                                                                                                                                                                                                                                                               |
|--------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id         | String                               | <b>Definition:</b> Specifies the ID of the project where the load balancer is used.<br><b>Range:</b> N/A                                                                                                                                                                                  |
| vip_subnet_cidr_id | String                               | <b>Definition:</b> Specifies the ID of the IPv4 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br><b>Range:</b> N/A                                                                                                                           |
| vip_address        | String                               | <b>Definition:</b> Specifies the private IPv4 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                                          |
| vip_port_id        | String                               | <b>Definition:</b> Specifies the ID of the port bound to the private IPv4 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                              |
| tags               | Array of <a href="#">Tag</a> objects | <b>Definition:</b> Specifies the tags added to the load balancer.                                                                                                                                                                                                                         |
| created_at         | String                               | <b>Definition:</b> Specifies the time when the load balancer was created.<br><b>Range:</b><br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                        |
| updated_at         | String                               | <b>Definition:</b> Specifies the time when the load balancer was updated.<br><b>Range:</b><br>The value must be in the format of <i>yyyy-MM-dd'T'HH:mm:ss'Z'</i> .                                                                                                                        |
| guaranteed         | Boolean                              | <b>Definition:</b> Specifies whether the load balancer is a dedicated load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>false:</b> The load balancer is a shared load balancer.</li><li>• <b>true:</b> The load balancer is a dedicated load balancer.</li></ul> |
| vpc_id             | String                               | <b>Definition:</b> Specifies the ID of the VPC where the load balancer is located.<br><b>Range:</b> N/A                                                                                                                                                                                   |



| Parameter              | Type                                     | Description                                                                                                                                                                                                                                                                       |
|------------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| eips                   | Array of <a href="#">EipInfo</a> objects | <b>Definition:</b> Specifies the EIP bound to the load balancer.<br><b>NOTE</b><br>This parameter has the same meaning as <b>publicips</b> .                                                                                                                                      |
| ipv6_vip_address       | String                                   | <b>Definition:</b> Specifies the IPv6 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                                                          |
| ipv6_vip_virsubnet_id  | String                                   | <b>Definition:</b> Specifies the ID of the IPv6 subnet where the load balancer is located. This subnet is also called the frontend subnet.<br><b>Range:</b> N/A                                                                                                                   |
| ipv6_vip_port_id       | String                                   | <b>Definition:</b> Specifies the ID of the port bound to the IPv6 address of the load balancer.<br><b>Range:</b> N/A                                                                                                                                                              |
| availability_zone_list | Array of strings                         | <b>Definition:</b> Specifies the list of AZs where the load balancers are created.<br><b>Range:</b> N/A                                                                                                                                                                           |
| enterprise_project_id  | String                                   | <b>Definition:</b> Specifies the ID of the enterprise project.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>0:</b> The resource belongs to the default enterprise project.</li><li>• A string in UUID format indicates a non-default enterprise project.</li></ul> |
| billing_info           | String                                   | <b>Definition:</b> Provides resource billing information.<br><b>Range:</b> <ul style="list-style-type: none"><li>• If the value is left blank, the resource is billed on a pay-per-use basis.</li></ul>                                                                           |
| l4_flavor_id           | String                                   | <b>Definition:</b> Specifies the ID of a flavor at Layer 4.<br>For an instance with elastic flavor, this parameter defines the maximum elastic flavor at Layer 4.<br><b>Range:</b> N/A                                                                                            |

| Parameter          | Type                                           | Description                                                                                                                                                                                                                                |
|--------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| l4_scale_flavor_id | String                                         | <b>Definition:</b> Specifies the ID of the elastic flavor at Layer 4.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                         |
| l7_flavor_id       | String                                         | <b>Definition:</b> Specifies the ID of a flavor at Layer 7.<br>For an instance with elastic flavor, this parameter defines the ID of the maximum elastic flavor at Layer 7.<br><b>Range:</b> N/A                                           |
| l7_scale_flavor_id | String                                         | <b>Definition:</b> Specifies the ID of an elastic flavor at Layer 7.<br><b>Range:</b> N/A<br>This parameter is unsupported. Please do not use it.                                                                                          |
| publicips          | Array of <a href="#">PublicIpInfo</a> objects  | <b>Definition:</b> Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer.<br><b>NOTE</b><br>This parameter has the same meaning as <b>eips</b> .                                                      |
| global_eips        | Array of <a href="#">GlobalEipInfo</a> objects | <b>Definition:</b> Specifies the global EIP bound to the load balancer.                                                                                                                                                                    |
| elb_virsubnet_ids  | Array of strings                               | <b>Definition:</b> Specifies the network IDs of subnets on the downstream plane.<br><b>Range:</b> N/A                                                                                                                                      |
| elb_virsubnet_type | String                                         | <b>Definition:</b> Specifies the type of the subnet on the downstream plane.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ipv4:</b> IPv4 subnets</li><li>• <b>dualstack:</b> subnets support IPv4/IPv6 dual stack</li></ul> |

| Parameter                  | Type                                | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------------|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_target_enable           | Boolean                             | <b>Definition:</b> Specifies whether to add backend servers that are not in the load balancer's VPC.<br><br>If you set it to <b>true</b> , you can associate servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using server IP addresses.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true</b>: This option will be enabled.</li><li>• <b>false</b>: This option will be disabled.</li></ul> |
| frozen_scene               | String                              | <b>Definition:</b> Specifies the scenario where the load balancer is frozen.<br><br>If there are multiple scenarios, separate them with commas (,).<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>ILLEGAL</b>: The load balancer is frozen due to violation of laws and regulations.</li><li>• <b>VERIFY</b>: Your account has not completed real-name authentication.</li><li>• <b>PARTNER</b>: The load balancer is frozen by the partner.</li><li>• <b>ARREAR</b>: The load balancer is frozen due to arrears.</li></ul>                          |
| ipv6_bandwidth             | <a href="#">BandwidthRef</a> object | <b>Definition:</b> Specifies the ID of the bandwidth.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| deletion_protection_enable | Boolean                             | <b>Definition:</b> Specifies whether to enable deletion protection.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>false</b>: This option will be disabled.</li><li>• <b>true</b>: This option will be enabled.</li></ul>                                                                                                                                                                                                                                                                                                                             |

| Parameter           | Type                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| autoscaling         | <a href="#">AutoscalingRef</a> object | <b>Definition:</b> Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer flavors can be automatically adjusted based on incoming traffic.<br><b>NOTE</b><br>This parameter has been deprecated, but is retained for compatibility purposes. Using this parameter is not recommended. If this parameter is specified, the load balancer with minimum flavors will be created and you will be billed for the minimum flavors. |
| public_border_group | String                                | <b>Definition:</b> Specifies the AZ group to which the load balancer belongs.<br><b>Range:</b> N/A                                                                                                                                                                                                                                                                                                                                                                  |
| charge_mode         | String                                | <b>Definition:</b> Specifies the charge mode of the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>flavor:</b> billed by the fixed flavor you select.</li><li>• <b>lcu:</b> billed by how many LCUs you have used.</li><li>• <b>Null:</b> If it is a shared load balancer, it is free. If it is a dedicated load balancer, it will be billed by the fixed flavor you select.</li></ul>                                                  |
| waf_failure_action  | String                                | <b>Definition:</b> Specifies traffic distributing policies when the WAF is faulty.<br><b>Range:</b> <b>discard</b> indicates traffic will not be distributed. <b>forward</b> indicates traffic will be distributed to the default backend servers.                                                                                                                                                                                                                  |
| protection_status   | String                                | <b>Definition:</b> Specifies the protection status.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): The resource is not protected.</li><li>• <b>consoleProtection:</b> Modifications are not allowed on the console.</li></ul> <b>Default value:</b> N/A                                                                                                                                        |

| Parameter         | Type   | Description                                                                                                                                                                     |
|-------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_reason | String | <b>Definition:</b> Specifies why modification protection is enabled.<br><b>Range:</b> The value can contain a maximum of 255 Unicode characters, excluding angle brackets (<>). |
| log_group_id      | String | <b>Definition:</b> Specifies the ID of the log group that is associated with the load balancer.<br><b>Range:</b> N/A                                                            |
| log_topic_id      | String | <b>Definition:</b> Specifies the ID of the log topic that is associated with the load balancer.<br><b>Range:</b> N/A                                                            |

**Table 5-874** PoolRef

| Parameter | Type   | Description                                                                    |
|-----------|--------|--------------------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the backend server group ID.<br><b>Range:</b> N/A |

**Table 5-875** ListenerRef

| Parameter | Type   | Description                                                        |
|-----------|--------|--------------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the listener ID.<br><b>Range:</b> N/A |

**Table 5-876** Tag

| Parameter | Type   | Description                                                      |
|-----------|--------|------------------------------------------------------------------|
| key       | String | <b>Definition:</b> Specifies the tag key.<br><b>Range:</b> N/A   |
| value     | String | <b>Definition:</b> Specifies the tag value.<br><b>Range:</b> N/A |

**Table 5-877** EipInfo

| Parameter   | Type    | Description                                                                                                                                                           |
|-------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| eip_id      | String  | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A                                                                                                         |
| eip_address | String  | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A                                                                                                            |
| ip_version  | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

**Table 5-878** PublicIpInfo

| Parameter        | Type    | Description                                                                                                                                                       |
|------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| publicip_id      | String  | <b>Definition:</b> Specifies the EIP ID.<br><b>Range:</b> N/A                                                                                                     |
| publicip_address | String  | <b>Definition:</b> Specifies the EIP.<br><b>Range:</b> N/A                                                                                                        |
| ip_version       | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 address</li><li>• 6: IPv6 address</li></ul> |

**Table 5-879** GlobalEipInfo

| Parameter            | Type   | Description                                                                 |
|----------------------|--------|-----------------------------------------------------------------------------|
| global_eip_id        | String | <b>Definition:</b> Specifies the ID of the global EIP.<br><b>Range:</b> N/A |
| global_eip_addresses | String | <b>Definition:</b> Specifies the global EIP.<br><b>Range:</b> N/A           |

| Parameter  | Type    | Description                                                                                                                                                           |
|------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_version | Integer | <b>Definition:</b> Specifies the IP address version.<br><b>Range:</b> <ul style="list-style-type: none"><li>• 4: IPv4 addresses</li><li>• 6: IPv6 addresses</li></ul> |

**Table 5-880** BandwidthRef

| Parameter | Type   | Description                                                  |
|-----------|--------|--------------------------------------------------------------|
| id        | String | <b>Definition:</b> Specifies the ID of the shared bandwidth. |

**Table 5-881** AutoscalingRef

| Parameter        | Type    | Description                                                                                                                                                                                                                                              |
|------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable           | Boolean | <b>Definition:</b> Specifies whether to enable elastic scaling for the load balancer.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> This option will be enabled.</li><li>• <b>false:</b> This option will be disabled.</li></ul> |
| min_l7_flavor_id | String  | <b>Definition:</b> Specifies the ID of the minimum elastic flavor at Layer 7.<br><b>Range:</b> N/A                                                                                                                                                       |

**Table 5-882** PageInfo

| Parameter       | Type   | Description                                                                                                                                                                                                                          |
|-----------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| previous_marker | String | <b>Definition:</b> Specifies the ID of the first record in the pagination query result. If <b>page_reverse</b> is set to <b>true</b> , this parameter is used together to query resources on the previous page.<br><b>Range:</b> N/A |

| Parameter     | Type    | Description                                                                                                                                                         |
|---------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| next_marker   | String  | <b>Definition:</b> Specifies the ID of the last record in the pagination query result. It is usually used to query resources on the next page.<br><b>Range:</b> N/A |
| current_count | Integer | <b>Definition:</b> Specifies the number of records returned on the current page.<br><b>Range:</b> N/A                                                               |

## Example Requests

Querying load balancers on each page

```
GET https://{ELB_Endpoint}/v3/b2782e6708b8475c993e6064bc456bf8/elb/recycle-bin/loadbalancers?limit=2&marker=87627cb6-9ff1-4580-984f-cc564fa9fc34
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "request_id": "46b7d911-cece-408c-a2cc-55c78ab025d8",
 "loadbalancers": [{
 "id": "65672f7e-2024-4c39-9198-98249da479c5",
 "auto_terminate_time": "2021-07-26T03:21:37Z",
 "project_id": "057ef081eb00d2732fd1c01a9be75e6f",
 "name": "dxq_2021_07_26_11_12_37",
 "description": "",
 "vip_port_id": "b289f890-a6fa-4405-a9cc-fe62b8a3bed0",
 "vip_address": "172.16.0.152",
 "admin_state_up": true,
 "provisioning_status": "ACTIVE",
 "operating_status": "ONLINE",
 "listeners": [{
 "id": "dc9572eb-a5b2-47b3-a982-44892d833892"
 }],
 "pools": [{
 "id": "dc6b01c4-f704-4427-a4c2-21cd5f58d177"
 }],
 "tags": [],
 "provider": "vlb",
 "created_at": "2021-07-26T03:12:37Z",
 "updated_at": "2021-07-26T03:12:37Z",
 "vpc_id": "6e0ee31f-7a46-4530-b32f-ce41f30959d4",
 "enterprise_project_id": "0",
 "availability_zone_list": ["az1"],
 "ipv6_vip_address": "2001:db8:a583:4cb:d6b8:f8b4:4211:fe72",
 "ipv6_vip_virusubnet_id": "0b9e3c5e-3ec8-46b3-bab9-80b1450e59ee",
 "ipv6_vip_port_id": "5186bb47-24e5-4171-b795-62d22846db9b",
 "publicips": [],
 "elb_virusubnet_ids": ["0b9e3c5e-3ec8-46b3-bab9-80b1450e59ee"],
 "elb_virusubnet_type": "dualstack",
 "ip_target_enable": false,
 "autoscaling": {
 "enable": false,
 "min_l7_flavor_id": ""
 }
 }]
}
```



```
 },
 "frozen_scene" : null,
 "eips" : [],
 "guaranteed" : true,
 "billing_info" : null,
 "l4_flavor_id" : "aa06b26b-9ff9-43c6-92b9-41e0f746bca6",
 "l4_scale_flavor_id" : null,
 "l7_flavor_id" : "e2a5675c-a181-444e-b9a5-17b052dc7fb9",
 "l7_scale_flavor_id" : null,
 "vip_subnet_cidr_id" : "96e52038-7983-462f-8a96-415d8a280b13",
 "public_border_group" : "center",
 "log_topic_id" : null,
 "log_group_id" : null
 }, {
 "id" : "cce5318e-c79a-4f68-94a2-9fb285c6efbe",
 "project_id" : "057ef081eb00d2732fd1c01a9be75e6f",
 "name" : "elb-reset",
 "description" : "",
 "vip_port_id" : null,
 "vip_address" : null,
 "admin_state_up" : true,
 "provisioning_status" : "ACTIVE",
 "operating_status" : "ONLINE",
 "listeners" : [{
 "id" : "0ae21c37-8b90-4e73-8a35-eedde6d2538c"
 }],
 "pools" : [{
 "id" : "904ecca6-8ebb-4974-9c5c-61d1d66fba17"
 }],
 "tags" : [],
 "provider" : "vlb",
 "created_at" : "2021-07-26T02:46:31Z",
 "updated_at" : "2021-07-26T02:46:59Z",
 "vpc_id" : "59cb11ef-f185-49ba-92af-0539e8ff9734",
 "enterprise_project_id" : "0",
 "availability_zone_list" : ["az1"],
 "ipv6_vip_address" : null,
 "ipv6_vip_virusubnet_id" : null,
 "ipv6_vip_port_id" : null,
 "publicips" : [{
 "publicip_id" : "0c07e04d-e2f9-41ad-b934-f58a65b6734d",
 "publicip_address" : "97.97.2.171",
 "ip_version" : 4
 }],
 "elb_virusubnet_ids" : ["7f817f9c-8731-4002-9e47-18cb8d431787"],
 "elb_virusubnet_type" : "dualstack",
 "ip_target_enable" : false,
 "autoscaling" : {
 "enable" : false,
 "min_l7_flavor_id" : ""
 },
 "frozen_scene" : null,
 "eips" : [{
 "eip_id" : "0c07e04d-e2f9-41ad-b934-f58a65b6734d",
 "eip_address" : "97.97.2.171",
 "ip_version" : 4
 }],
 "guaranteed" : true,
 "billing_info" : null,
 "l4_flavor_id" : "636ba721-935a-4ca5-a685-8076ce0e4148",
 "l4_scale_flavor_id" : null,
 "l7_flavor_id" : null,
 "l7_scale_flavor_id" : null,
 "vip_subnet_cidr_id" : null,
 "public_border_group" : "center",
 "log_topic_id" : null,
 "log_group_id" : null
 }],
 "page_info" : {
```

```
"next_marker" : "cce5318e-c79a-4f68-94a2-9fb285c6efbe",
"previous_marker" : "65672f7e-2024-4c39-9198-98249da479c5",
"current_count" : 2
}
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ListRecycleBinLoadBalancersSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR_REGION>"))
 .build();
 ListRecycleBinLoadBalancersRequest request = new ListRecycleBinLoadBalancersRequest();
 try {
 ListRecycleBinLoadBalancersResponse response = client.listRecycleBinLoadBalancers(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

### Python

```
coding: utf-8
```

```
import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ListRecycleBinLoadBalancersRequest()
 response = client.list_recycle_bin_load_balancers(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ListRecycleBinLoadBalancersRequest{}
 response, err := client.ListRecycleBinLoadBalancers(request)
```

```
if err == nil {
 fmt.Printf("%+v\n", response)
} else {
 fmt.Println(err)
}
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.20.2 Querying the Recycle Bin Policy

### Function

This API is used to query the recycle bin policy.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/elb/recycle-bin

**Table 5-883** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-884** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 200

**Table 5-885** Response body parameters

| Parameter   | Type                                          | Description                                                         |
|-------------|-----------------------------------------------|---------------------------------------------------------------------|
| recycle_bin | <a href="#">RecycleBinResponseBody</a> object | <b>Definition:</b> Specifies the response body for the recycle bin. |

**Table 5-886** RecycleBinResponseBody

| Parameter  | Type                                    | Description                                                                                                                                                                                                                                        |
|------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | String                                  | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters. |
| policy     | <a href="#">RecycleBinPolicy</a> object | <b>Definition:</b> Specifies the recycle bin policy.                                                                                                                                                                                               |
| enable     | Boolean                                 | <b>Definition:</b> Specifies whether to enable recycle bin.<br><b>Range:</b> <ul style="list-style-type: none"><li><b>true:</b> Enable recycle bin.</li><li><b>false:</b> Disable recycle bin.</li></ul>                                           |

**Table 5-887** RecycleBinPolicy

| Parameter              | Type    | Description                                                                                                                                                                                                                                                                          |
|------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| recycle_threshold_hour | Integer | <b>Definition:</b> Specifies how old a deleted or unsubscribed load balancer has to be for it to be moved to the recycle bin. A load balancer can only be moved to the recycle bin if it has been there longer than the specified number of days in the policy.<br><b>Range:</b> N/A |
| retention_hour         | Integer | <b>Definition:</b> Specifies how long you want your load balancers to be kept in the recycle bin.<br><b>Range:</b> N/A                                                                                                                                                               |

## Example Requests

```
https://{ELB_Endpoint}/v3/7b7705dce1e847b08b3b16dda67fec24/elb/recycle-bin
```

## Example Responses

**Status code: 200**

Query succeeded.

```
{
 "recycle_bin" : {
 "enable" : true,
 "policy" : {
 "recycle_threshold_hour" : 20,
 "retention_hour" : 20
 },
 "project_id" : "7b7705dce1e847b08b3b16dda67fec24"
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class ShowRecycleBinSolution {
```

```
public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 ShowRecycleBinRequest request = new ShowRecycleBinRequest();
 try {
 ShowRecycleBinResponse response = client.showRecycleBin(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrMsg());
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.getenv("CLOUD_SDK_AK")
 sk = os.getenv("CLOUD_SDK_SK")
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = ShowRecycleBinRequest()
 response = client.show_recycle_bin(request)
 print(response)
 except exceptions.ClientRequestException as e:
```

```
print(e.status_code)
print(e.request_id)
print(e.error_code)
print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.ShowRecycleBinRequest{}
 response, err := client.ShowRecycleBin(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description      |
|-------------|------------------|
| 200         | Query succeeded. |

## Error Codes

See [Error Codes](#).



## 5.20.3 Enabling or Disabling Recycle Bin

### Function

This API is used to enable or disable recycle bin. Once this option is enabled, deleted load balancers will be kept in the recycle bin. If this option is not enabled, deleted load balancers will be permanently deleted and cannot be restored. Before disabling recycle bin, restore or permanently delete load balancers from the recycle bin.

### Calling Method

For details, see [Calling APIs](#).

### URI

PUT /v3/{project\_id}/elb/recycle-bin

**Table 5-888** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

### Request Parameters

**Table 5-889** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-890** Request body parameters

| Parameter   | Mandatory | Type                                         | Description                                                                                  |
|-------------|-----------|----------------------------------------------|----------------------------------------------------------------------------------------------|
| recycle_bin | No        | <a href="#">RecycleBinRequestBody</a> object | <b>Definition:</b> Request body for updating the value of <b>enable</b> for the recycle bin. |

**Table 5-891** RecycleBinRequestBody

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                  |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | No        | Boolean | <b>Definition:</b> Specifies whether to enable recycle bin.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Enable recycle bin.</li><li>• <b>false:</b> Disable recycle bin.</li></ul> |

## Response Parameters

Status code: 200

**Table 5-892** Response body parameters

| Parameter   | Type                                          | Description                                                         |
|-------------|-----------------------------------------------|---------------------------------------------------------------------|
| recycle_bin | <a href="#">RecycleBinResponseBody</a> object | <b>Definition:</b> Specifies the response body for the recycle bin. |

**Table 5-893** RecycleBinResponseBody

| Parameter  | Type                                    | Description                                                                                                                                                                                                                                        |
|------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | String                                  | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters. |
| policy     | <a href="#">RecycleBinPolicy</a> object | <b>Definition:</b> Specifies the recycle bin policy.                                                                                                                                                                                               |

| Parameter | Type    | Description                                                                                                                                                                                                  |
|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable recycle bin.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Enable recycle bin.</li><li>• <b>false:</b> Disable recycle bin.</li></ul> |

**Table 5-894** RecycleBinPolicy

| Parameter              | Type    | Description                                                                                                                                                                                                                                                                          |
|------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| recycle_threshold_hour | Integer | <b>Definition:</b> Specifies how old a deleted or unsubscribed load balancer has to be for it to be moved to the recycle bin. A load balancer can only be moved to the recycle bin if it has been there longer than the specified number of days in the policy.<br><b>Range:</b> N/A |
| retention_hour         | Integer | <b>Definition:</b> Specifies how long you want your load balancers to be kept in the recycle bin.<br><b>Range:</b> N/A                                                                                                                                                               |

## Example Requests

```
PUT https://{ELB_Endpoint}/v3/7b7705dce1e847b08b3b16dda67fec24/elb/recycle-bin
{
 "recycle_bin" : {
 "enable" : false
 }
}
```

## Example Responses

**Status code: 200**

Query succeeded.

```
{
 "recycle_bin" : {
 "enable" : true,
 "policy" : {
 "recycle_threshold_hour" : 20,
 "retention_hour" : 20
 },
 "project_id" : "7b7705dce1e847b08b3b16dda67fec24"
 }
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class UpdateRecycleBinEnableSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 UpdateRecycleBinEnableRequest request = new UpdateRecycleBinEnableRequest();
 UpdateRecycleBinEnableRequestBody body = new UpdateRecycleBinEnableRequestBody();
 RecycleBinRequestBody recycleBinbody = new RecycleBinRequestBody();
 recycleBinbody.withEnable(false);
 body.withRecycleBin(recycleBinbody);
 request.withBody(body);
 try {
 UpdateRecycleBinEnableResponse response = client.updateRecycleBinEnable(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrMsg());
 }
 }
}
```

### Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
```

```
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = UpdateRecycleBinEnableRequest()
 recycleBinbody = RecycleBinRequestBody(
 enable=False
)
 request.body = UpdateRecycleBinEnableRequestBody(
 recycle_bin=recycleBinbody
)
 response = client.update_recycle_bin_enable(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
```

```
Build()

request := &model.UpdateRecycleBinEnableRequest{
 enableRecycleBin:= false
 recycleBinbody := &model.RecycleBinRequestBody{
 Enable: &enableRecycleBin,
 }
 request.Body = &model.UpdateRecycleBinEnableRequestBody{
 RecycleBin: recycleBinbody,
 }
 response, err := client.UpdateRecycleBinEnable(request)
 if err == nil {
 fmt.Printf("%v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description      |
|-------------|------------------|
| 200         | Query succeeded. |

## Error Codes

See [Error Codes](#).

## 5.20.4 Updating the Recycle Bin Policy

### Function

This API is used to update the recycle bin policy. If recycle bin is not enabled, an error is reported.

### Calling Method

For details, see [Calling APIs](#).

### URI

PUT /v3/{project\_id}/elb/recycle-bin/policy

**Table 5-895** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-896** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-897** Request body parameters

| Parameter   | Mandatory | Type                                               | Description                                                          |
|-------------|-----------|----------------------------------------------------|----------------------------------------------------------------------|
| recycle_bin | No        | <a href="#">RecycleBinPolicyRequestBody</a> object | <b>Definition:</b> Request body for updating the recycle bin policy. |

**Table 5-898** RecycleBinPolicyRequestBody

| Parameter | Mandatory | Type                                    | Description                                          |
|-----------|-----------|-----------------------------------------|------------------------------------------------------|
| policy    | No        | <a href="#">RecycleBinPolicy</a> object | <b>Definition:</b> Specifies the recycle bin policy. |

**Table 5-899** RecycleBinPolicy

| Parameter                  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                          |
|----------------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| recycle_thresh<br>old_hour | No        | Integer | <b>Definition:</b> Specifies how old a deleted or unsubscribed load balancer has to be for it to be moved to the recycle bin. A load balancer can only be moved to the recycle bin if it has been there longer than the specified number of days in the policy.<br><b>Range:</b> N/A |
| retention_hour             | No        | Integer | <b>Definition:</b> Specifies how long you want your load balancers to be kept in the recycle bin.<br><b>Range:</b> N/A                                                                                                                                                               |

## Response Parameters

**Status code:** 200

**Table 5-900** Response body parameters

| Parameter   | Type                                          | Description                                                         |
|-------------|-----------------------------------------------|---------------------------------------------------------------------|
| recycle_bin | <a href="#">RecycleBinResponseBody</a> object | <b>Definition:</b> Specifies the response body for the recycle bin. |

**Table 5-901** RecycleBinResponseBody

| Parameter  | Type                                    | Description                                                                                                                                                                                                                                        |
|------------|-----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | String                                  | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters. |
| policy     | <a href="#">RecycleBinPolicy</a> object | <b>Definition:</b> Specifies the recycle bin policy.                                                                                                                                                                                               |



| Parameter | Type    | Description                                                                                                                                                                                                  |
|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable    | Boolean | <b>Definition:</b> Specifies whether to enable recycle bin.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>true:</b> Enable recycle bin.</li><li>• <b>false:</b> Disable recycle bin.</li></ul> |

**Table 5-902** RecycleBinPolicy

| Parameter              | Type    | Description                                                                                                                                                                                                                                                                          |
|------------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| recycle_threshold_hour | Integer | <b>Definition:</b> Specifies how old a deleted or unsubscribed load balancer has to be for it to be moved to the recycle bin. A load balancer can only be moved to the recycle bin if it has been there longer than the specified number of days in the policy.<br><b>Range:</b> N/A |
| retention_hour         | Integer | <b>Definition:</b> Specifies how long you want your load balancers to be kept in the recycle bin.<br><b>Range:</b> N/A                                                                                                                                                               |

## Example Requests

```
https://{ELB_Endpoint}/v3/7b7705dce1e847b08b3b16dda67fec24/elb/recycle-bin/policy

{
 "recycle_bin" : {
 "policy" : {
 "recycle_threshold_hour" : 21,
 "retention_hour" : 20
 }
 }
}
```

## Example Responses

**Status code: 200**

Response body for updating the recycle bin policy

```
{
 "recycle_bin" : {
 "enable" : true,
 "policy" : {
 "recycle_threshold_hour" : 20,
 "retention_hour" : 20
 },
 "project_id" : "7b7705dce1e847b08b3b16dda67fec24"
```

```
}
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class UpdateRecycleBinPolicySolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 UpdateRecycleBinPolicyRequest request = new UpdateRecycleBinPolicyRequest();
 UpdateRecycleBinPolicyRequestBody body = new UpdateRecycleBinPolicyRequestBody();
 RecycleBinPolicy policyRecycleBin = new RecycleBinPolicy();
 policyRecycleBin.withRecycleThresholdHour(21)
 .withRetentionHour(20);
 RecycleBinPolicyRequestBody recycleBinbody = new RecycleBinPolicyRequestBody();
 recycleBinbody.withPolicy(policyRecycleBin);
 body.withRecycleBin(recycleBinbody);
 request.withBody(body);
 try {
 UpdateRecycleBinPolicyResponse response = client.updateRecycleBinPolicy(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudsdkelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudsdkelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = UpdateRecycleBinPolicyRequest()
 policyRecycleBin = RecycleBinPolicy(
 recycle_threshold_hour=21,
 retention_hour=20
)
 recycleBinbody = RecycleBinPolicyRequestBody(
 policy=policyRecycleBin
)
 request.body = UpdateRecycleBinPolicyRequestBody(
 recycle_bin=recycleBinbody
)
 response = client.update_recycle_bin_policy(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"
```

```
auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

client := elb.NewElbClient(
 elb.ElClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

request := &model.UpdateRecycleBinPolicyRequest{
 recycleThresholdHourPolicy:= int32(21)
 retentionHourPolicy:= int32(20)
 policyRecycleBin := &model.RecycleBinPolicy{
 RecycleThresholdHour: &recycleThresholdHourPolicy,
 RetentionHour: &retentionHourPolicy,
 }
 recycleBinbody := &model.RecycleBinPolicyRequestBody{
 Policy: policyRecycleBin,
 }
 request.Body = &model.UpdateRecycleBinPolicyRequestBody{
 RecycleBin: recycleBinbody,
 }
 response, err := client.UpdateRecycleBinPolicy(request)
 if err == nil {
 fmt.Printf("%v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description                                       |
|-------------|---------------------------------------------------|
| 200         | Response body for updating the recycle bin policy |

## Error Codes

See [Error Codes](#).

## 5.20.5 Restoring a Load Balancer from the Recycle Bin

### Function

This API is used to restore a load balancer from the recycle bin.

### Calling Method

For details, see [Calling APIs](#).

## URI

PUT /v3/{project\_id}/elb/recycle-bin/loadbalancers/{loadbalancer\_id}/recover

**Table 5-903** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                            |

## Request Parameters

**Table 5-904** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

Status code: 200

**Table 5-905** Response body parameters

| Parameter  | Type   | Description                                                                                                                                                                                            |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| request_id | String | <b>Definition:</b> Specifies the request ID.<br><b>Range:</b> The value is automatically generated, and can contain characters including digits, lowercase letters, and hyphens (-).                   |
| type       | String | <b>Definition:</b> Specifies the load balancer type.<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>v2:</b> shared load balancers</li><li>• <b>v3:</b> dedicated load balancers</li></ul> |
| job_id     | String | <b>Definition:</b> Specifies the restoration task ID.<br><b>Range:</b> N/A                                                                                                                             |

## Example Requests

None

## Example Responses

**Status code: 200**

Successful request.

```
{
 "request_id" : "841e0da7-5835-4130-9a47-01688f34a154",
 "job_id" : "062804a2-9e39-4dde-bd9b-271859ee312b",
 "type" : "v3"
}
```

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class RestoreLoadbalancerSolution {
```

```
public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 String ak = System.getenv("CLOUD_SDK_AK");
 String sk = System.getenv("CLOUD_SDK_SK");
 String projectId = "{project_id}";

 ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

 ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
 RestoreLoadbalancerRequest request = new RestoreLoadbalancerRequest();
 request.withLoadbalancerId("{loadbalancer_id}");
 try {
 RestoreLoadbalancerResponse response = client.restoreLoadbalancer(request);
 System.out.println(response.toString());
 } catch (ConnectionException e) {
 e.printStackTrace();
 } catch (RequestTimeoutException e) {
 e.printStackTrace();
 } catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
 }
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.getenv("CLOUD_SDK_AK")
 sk = os.getenv("CLOUD_SDK_SK")
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = RestoreLoadbalancerRequest()
 request.loadbalancer_id = "{loadbalancer_id}"
 response = client.restore_loadbalancer(request)
```

```
print(response)
except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.RestoreLoadbalancerRequest{}
 request.LoadbalancerId = "{loadbalancer_id}"
 response, err := client.RestoreLoadbalancer(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |



## Error Codes

See [Error Codes](#).

## 5.20.6 Permanently Deleting a Load Balancer from the Recycle Bin

### Function

This API is used to permanently delete a load balancer from the recycle bin. After the deletion, the load balancer cannot be restored.

### Constraints

You can only permanently delete load balancers from the recycle bin.

### Calling Method

For details, see [Calling APIs](#).

### URI

DELETE /v3/{project\_id}/elb/recycle-bin/loadbalancers/{loadbalancer\_id}

**Table 5-906** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                            |

## Request Parameters

**Table 5-907** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 204**

Successful request.

None

## Example Requests

Permanently deleting a load balancer from the recycle bin

```
DELETE https://{ELB_Endpoint}/v3/060576782980d5762f9ec014dd2f1148/elb/recycle-bin/loadbalancers/32c1057f-74a1-42d6-9b20-d55b80ab89c4
```

## Example Responses

None

## SDK Sample Code

The SDK sample code is as follows.

### Java

```
package com.huaweicloud.sdk.test;

import com.huaweicloud.sdk.core.auth.ICredential;
import com.huaweicloud.sdk.core.auth.BasicCredentials;
import com.huaweicloud.sdk.core.exception.ConnectionException;
import com.huaweicloud.sdk.core.exception.RequestTimeoutException;
import com.huaweicloud.sdk.core.exception.ServiceResponseException;
import com.huaweicloud.sdk.elb.v3.region.ElbRegion;
import com.huaweicloud.sdk.elb.v3.*;
import com.huaweicloud.sdk.elb.v3.model.*;

public class DeleteRecycleLoadBalancerSolution {

 public static void main(String[] args) {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great
 // security risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or
 // environment variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running
 // this example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 }
}
```

```
String ak = System.getenv("CLOUD_SDK_AK");
String sk = System.getenv("CLOUD_SDK_SK");
String projectId = "{project_id}";

ICredential auth = new BasicCredentials()
 .withProjectId(projectId)
 .withAk(ak)
 .withSk(sk);

ElbClient client = ElbClient.newBuilder()
 .withCredential(auth)
 .withRegion(ElbRegion.valueOf("<YOUR REGION>"))
 .build();
DeleteRecycleLoadBalancerRequest request = new DeleteRecycleLoadBalancerRequest();
request.withLoadbalancerId("{loadbalancer_id}");
try {
 DeleteRecycleLoadBalancerResponse response = client.deleteRecycleLoadBalancer(request);
 System.out.println(response.toString());
} catch (ConnectionException e) {
 e.printStackTrace();
} catch (RequestTimeoutException e) {
 e.printStackTrace();
} catch (ServiceResponseException e) {
 e.printStackTrace();
 System.out.println(e.getHttpStatusCode());
 System.out.println(e.getRequestId());
 System.out.println(e.getErrorCode());
 System.out.println(e.getErrorMsg());
}
}
```

## Python

```
coding: utf-8

import os
from huaweicloudsdkcore.auth.credentials import BasicCredentials
from huaweicloudskelb.v3.region.elb_region import ElbRegion
from huaweicloudsdkcore.exceptions import exceptions
from huaweicloudskelb.v3 import *

if __name__ == "__main__":
 # The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 # risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 # variables and decrypted during use to ensure security.
 # In this example, AK and SK are stored in environment variables for authentication. Before running this
 # example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak = os.environ["CLOUD_SDK_AK"]
 sk = os.environ["CLOUD_SDK_SK"]
 projectId = "{project_id}"

 credentials = BasicCredentials(ak, sk, projectId)

 client = ElbClient.new_builder() \
 .with_credentials(credentials) \
 .with_region(ElbRegion.value_of("<YOUR REGION>")) \
 .build()

 try:
 request = DeleteRecycleLoadBalancerRequest()
 request.loadbalancer_id = "{loadbalancer_id}"
 response = client.delete_recycle_load_balancer(request)
 print(response)
 except exceptions.ClientRequestException as e:
 print(e.status_code)
 print(e.request_id)
 print(e.error_code)
 print(e.error_msg)
```

## Go

```
package main

import (
 "fmt"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/core/auth/basic"
 elb "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3"
 "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/model"
 region "github.com/huaweicloud/huaweicloud-sdk-go-v3/services/elb/v3/region"
)

func main() {
 // The AK and SK used for authentication are hard-coded or stored in plaintext, which has great security
 // risks. It is recommended that the AK and SK be stored in ciphertext in configuration files or environment
 // variables and decrypted during use to ensure security.
 // In this example, AK and SK are stored in environment variables for authentication. Before running this
 // example, set environment variables CLOUD_SDK_AK and CLOUD_SDK_SK in the local environment
 ak := os.Getenv("CLOUD_SDK_AK")
 sk := os.Getenv("CLOUD_SDK_SK")
 projectId := "{project_id}"

 auth := basic.NewCredentialsBuilder().
 WithAk(ak).
 WithSk(sk).
 WithProjectId(projectId).
 Build()

 client := elb.NewElbClient(
 elb.ElbClientBuilder().
 WithRegion(region.ValueOf("<YOUR REGION>")).
 WithCredential(auth).
 Build())

 request := &model.DeleteRecycleLoadBalancerRequest{}
 request.LoadbalancerId = "{loadbalancer_id}"
 response, err := client.DeleteRecycleLoadBalancer(request)
 if err == nil {
 fmt.Printf("%+v\n", response)
 } else {
 fmt.Println(err)
 }
}
```

## More

For SDK sample code of more programming languages, see the Sample Code tab in [API Explorer](#). SDK sample code can be automatically generated.

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.21 Tag Management

### 5.21.1 Batch Adding or Deleting Load Balancer Tags

#### Function

This API is used to batch add tags to or delete tags from a load balancer.

#### Calling Method

For details, see [Calling APIs](#).

#### URI

POST /v3/{project\_id}/loadbalancers/{loadbalancer\_id}/tags/action

**Table 5-908** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                            |

## Request Parameters

**Table 5-909** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-910** Request body parameters

| Parameter | Mandatory | Type                                                     | Description                                                                                                                                                                                                       |
|-----------|-----------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| action    | Yes       | String                                                   | <b>Definition:</b> Specifies the operation type.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>create:</b> adds a tag.</li><li>• <b>delete:</b> deletes a tag.</li></ul> |
| tags      | Yes       | Array of <a href="#">ChangeResourceTagOption</a> objects | <b>Definition:</b> Specifies the tags to be operated.<br><b>Constraints:</b> N/A                                                                                                                                  |

**Table 5-911** ChangeResourceTagOption

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | <b>Definition:</b> Specifies the tag key.<br><b>Constraints:</b> The key cannot be left blank.<br><b>Range:</b> A key can contain a maximum of 36 Unicode characters. It cannot contain asterisks (*), angle brackets (< and >), backslashes (\), equal signs (=), commas (,), vertical bars ( ), or slashes (/).<br><b>Default value:</b> N/A |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                              |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | Yes       | String | <b>Definition:</b> Specifies the tag value.<br><b>Constraints:</b> The value must be specified when you delete a tag.<br><b>Range:</b> A value can contain a maximum of 255 Unicode characters. It cannot contain asterisks (*), angle brackets (< and >), backslashes (\), equal signs (=), commas (,), vertical bars ( ), or slashes (/).<br><b>Default value:</b> N/A |

## Response Parameters

**Status code:** 204

Successful request.

None

## Example Requests

```
POST https://{ELB_Endpoint}/v3/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/7add33ad-11dc-4ab9-a50f-419703f13163/tags/action
{
 "tags" : [{
 "key" : "key13",
 "value" : "value12"
 }],
 "action" : "create"
}
```

## Example Responses

None

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.21.2 Querying the Tags of All Load Balancers

### Function

This API is used to query the tags of all the load balancers in a specified project.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/loadbalancers/tags

**Table 5-912** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

### Request Parameters

**Table 5-913** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

### Response Parameters

**Status code:** 200

Successful request.

None



## Example Requests

```
GET https://{ELB_Endpoint}/v3/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/tags
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "tags": [{
 "values": ["value1", "value2"],
 "key": "key1"
 }, {
 "values": ["value1", "value2"],
 "key": "key2"
 }]
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.21.3 Querying All Tags of a Load Balancer

### Function

This API is used to query all the tags of a load balancer.

### Calling Method

For details, see [Calling APIs](#).

### URI

```
GET /v3/{project_id}/loadbalancers/{loadbalancer_id}/tags
```

**Table 5-914** Path Parameters

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-----------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id      | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| loadbalancer_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                            |

## Request Parameters

**Table 5-915** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 200**

Successful request.

None

## Example Requests

```
GET https://{ELB_Endpoint}/v3/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/
7add33ad-11dc-4ab9-a50f-419703f13163/tags
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "tags" : [{
 "value" : "value1",
 "key" : "key1"
 }, {
 "value" : "value3",
 "key" : "key2"
 }]
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.21.4 Batch Adding or Deleting Listener Tags

### Function

This API is used to batch add or delete listener tags.

### Calling Method

For details, see [Calling APIs](#).

### URI

POST /v3/{project\_id}/listeners/{listener\_id}/tags/action

**Table 5-916** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

| Parameter   | Mandatory | Type   | Description                                                                                                                     |
|-------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------|
| listener_id | Yes       | String | <b>Definition:</b> Specifies the load balancer ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Request Parameters

**Table 5-917** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

**Table 5-918** Request body parameters

| Parameter | Mandatory | Type                                                     | Description                                                                                                                                                                                                       |
|-----------|-----------|----------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| action    | Yes       | String                                                   | <b>Definition:</b> Specifies the operation type.<br><b>Constraints:</b> N/A<br><b>Range:</b> <ul style="list-style-type: none"><li>• <b>create:</b> adds a tag.</li><li>• <b>delete:</b> deletes a tag.</li></ul> |
| tags      | Yes       | Array of <a href="#">ChangeResourceTagOption</a> objects | <b>Definition:</b> Specifies the tags to be operated.<br><b>Constraints:</b> N/A                                                                                                                                  |

**Table 5-919** ChangeResourceTagOption

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                              |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | <b>Definition:</b> Specifies the tag key.<br><b>Constraints:</b> The key cannot be left blank.<br><b>Range:</b> A key can contain a maximum of 36 Unicode characters. It cannot contain asterisks (*), angle brackets (< and >), backslashes (\), equal signs (=), commas (,), vertical bars ( ), or slashes (/).<br><b>Default value:</b> N/A                           |
| value     | Yes       | String | <b>Definition:</b> Specifies the tag value.<br><b>Constraints:</b> The value must be specified when you delete a tag.<br><b>Range:</b> A value can contain a maximum of 255 Unicode characters. It cannot contain asterisks (*), angle brackets (< and >), backslashes (\), equal signs (=), commas (,), vertical bars ( ), or slashes (/).<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 204**

Successful request.

None

## Example Requests

POST https://{ELB\_Endpoint}/v3/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/7add33ad-11dc-4ab9-a50f-419703f13163/tags/action

```
{
 "tags": [{
 "key": "key13",
 "value": "value12"
 }],
 "action": "create"
}
```

## Example Responses

None

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 204         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.21.5 Querying the Tags of All Listeners

### Function

This API is used to query the tags of all listeners in a project.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/listeners/tags

**Table 5-920** Path Parameters

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |

## Request Parameters

Table 5-921 Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |

## Response Parameters

**Status code: 200**

Successful request.

None

## Example Requests

GET https://{ELB\_Endpoint}/v3/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/tags

## Example Responses

**Status code: 200**

Successful request.

```
{
 "tags": [{
 "values": ["value1", "value2"],
 "key": "key1"
 }, {
 "values": ["value1", "value2"],
 "key": "key2"
 }]
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

## 5.21.6 Querying All Tags of a Listener

### Function

This API is used to query all tags of a listener.

### Calling Method

For details, see [Calling APIs](#).

### URI

GET /v3/{project\_id}/listeners/{listener\_id}/tags

**Table 5-922** Path Parameters

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id  | Yes       | String | <b>Definition:</b> Specifies the project ID. For details about how to obtain a project ID, see <a href="#">Obtaining a Project ID</a> .<br><b>Constraints:</b> N/A<br><b>Range:</b> The value can contain a maximum of 32 characters, including digits and lowercase letters.<br><b>Default value:</b> N/A |
| listener_id | Yes       | String | <b>Definition:</b> Specifies the listener ID.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A                                                                                                                                                                                 |

### Request Parameters

**Table 5-923** Request header parameters

| Parameter    | Mandatory | Type   | Description                                                                                                                                      |
|--------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Auth-Token | Yes       | String | <b>Definition:</b> Specifies the token used for IAM authentication.<br><b>Constraints:</b> N/A<br><b>Range:</b> N/A<br><b>Default value:</b> N/A |



## Response Parameters

**Status code: 200**

Successful request.

None

## Example Requests

```
GET https://{ELB_Endpoint}/v3/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/7add33ad-11dc-4ab9-a50f-419703f13163/tags
```

## Example Responses

**Status code: 200**

Successful request.

```
{
 "tags" : [{
 "value" : "value1",
 "key" : "key1"
 }, {
 "value" : "value3",
 "key" : "key2"
 }]
}
```

## Status Codes

| Status Code | Description         |
|-------------|---------------------|
| 200         | Successful request. |

## Error Codes

See [Error Codes](#).

# 6 APIs (V2)

## 6.1 Load Balancer

### 6.1.1 Creating a Load Balancer

#### Function

This API is used to create a private network load balancer. After the load balancer is created, its details, such as load balancer ID, IP address, and subnet ID, are returned.

To create a public network load balancer, you also need to call the API for assigning an EIP and associate this IP address to the port bound to the IP address of the private network load balancer.

You can set the **enterprise\_project\_id** parameter to perform fine-grained authorization for resources.

#### URI

POST /v2/{project\_id}/elb/loadbalancers

Table 6-1 Parameter description

| Parameter  | Mandatory | Type   | Description               |
|------------|-----------|--------|---------------------------|
| project_id | Yes       | String | Specifies the project ID. |

## Request

**Table 6-2** Parameter description

| Parameter    | Mandatory | Type                                | Description                                                               |
|--------------|-----------|-------------------------------------|---------------------------------------------------------------------------|
| loadbalancer | Yes       | <a href="#">Loadbalancer</a> object | Specifies the load balancer. For details, see <a href="#">Table 6-3</a> . |

**Table 6-3** [loadbalancer](#) parameter description

| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                 |
|---------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name          | No        | String | Specifies the load balancer name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                        |
| description   | No        | String | Provides supplementary information about the load balancer.<br>The value contains a maximum of 255 characters.                                                                                                                                              |
| tenant_id     | No        | String | Specifies the ID of the project where the load balancer is used.<br>The value contains a maximum of 255 characters.<br>The value must be the same as the value of <b>project_id</b> in the token.                                                           |
| vip_subnet_id | Yes       | String | Specifies the ID of the IPv4 subnet where the load balancer works. Obtain the value by listing the subnets (The parameter is <b>neutron_subnet_id</b> ). The private IP address of the load balancer is in this subnet.<br>Only IPv4 subnets are supported. |
| provider      | No        | String | Specifies the provider of the load balancer.<br>The value can only be <b>vlb</b> .                                                                                                                                                                          |

| Parameter                          | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>vip_address</code>           | No        | String  | <p>Specifies the private IP address of the load balancer.</p> <p>This IP address must be the one in the subnet specified by <b><code>vip_subnet_id</code></b>. If this parameter is not specified, an IP address is automatically assigned to the load balancer from the subnet specified by <b><code>vip_subnet_id</code></b>.</p> <p>The value contains a maximum of 64 characters.</p> <p>You cannot specify a private IP address for a yearly/monthly load balancer. The system will assign one from the subnet.</p> |
| <code>admin_state_up</code>        | No        | Boolean | <p>Specifies the administrative status of the load balancer. The load balancer stops receiving traffic after it is disabled.</p> <p>The value can be one of the following:</p> <p><b>true</b>: Enable the load balancer.</p> <p><b>false</b>: Disable the load balancer.</p> <p>Default value: <b>true</b></p>                                                                                                                                                                                                           |
| <code>enterprise_project_id</code> | No        | String  | <p>Specifies the enterprise project ID. When creating a load balancer, you can assign an enterprise project to the load balancer.</p> <p>The value is character string <b>0</b> or a UUID with hyphens (-). Value <b>0</b> indicates the default enterprise project.</p> <p>The default value is <b>0</b>.</p> <p><b>NOTE</b></p> <p>For more information about enterprise projects and how to obtain enterprise project IDs, see <a href="#">Enterprise Management User Guide</a>.</p>                                  |
| <code>protection_statuses</code>   | No        | String  | <p>Specifies whether modification protection is enabled. The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul>                                                                                                                                                    |

| Parameter         | Mandatory | Type                       | Description                                                                                                                                             |
|-------------------|-----------|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_reason | No        | String                     | Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> . |
| prepaid_options   | No        | PrepaidCreateOption object | Specifies the prepaid billing configuration of a load balancer. If this structure is passed, a prepaid load balancer is created.                        |

**Table 6-4** PrepaidCreateOption

| Parameter   | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                       |
|-------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| period_type | Yes       | String  | Specifies the subscription period type.<br>The value can be: <ul style="list-style-type: none"><li>• <b>month</b>: monthly subscriptions</li><li>• <b>year</b>: yearly subscriptions</li></ul>                                                                                                                    |
| period_num  | No        | Integer | Specifies the number of subscription periods.<br>The value can be: <ul style="list-style-type: none"><li>• If <b>period_type</b> is set to <b>month</b>, the value ranges from <b>1</b> to <b>9</b>.</li><li>• If <b>period_type</b> is set to <b>year</b>, the value ranges from <b>1</b> to <b>3</b>.</li></ul> |
| auto_renew  | No        | Boolean | Specifies whether to enable automatic renewal.<br>The value can be: <ul style="list-style-type: none"><li>• <b>true</b>: Enable automatic renewal.</li><li>• <b>false</b>: Disable automatic renewal.</li></ul>                                                                                                   |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| auto_pay  | No        | Boolean | <p>Specifies whether an order is automatically paid using your account balance without manual operations.</p> <p>Constraints: If you use automatic payment, only your account balance can be used. If you want to use a voucher, disable automatic payment and select the voucher for the payment in the Billing Center.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>true</b>: The order will be automatically paid.</li><li>• <b>false</b>: The order will not be automatically paid.</li></ul> |

## Response

**Table 6-5** Parameter description

| Parameter    | Type                       | Description                                                               |
|--------------|----------------------------|---------------------------------------------------------------------------|
| loadbalancer | <b>Loadbalancer</b> object | Specifies the load balancer. For details, see <a href="#">Table 6-6</a> . |

**Table 6-6** loadbalancer parameter description

| Parameter  | Type   | Description                                                                                     |
|------------|--------|-------------------------------------------------------------------------------------------------|
| id         | String | Specifies the load balancer ID.                                                                 |
| project_id | String | Specifies the ID of the project where the load balancer is used.                                |
| tenant_id  | String | Specifies the tenant ID.                                                                        |
| name       | String | <p>Specifies the load balancer name.</p> <p>The value contains a maximum of 255 characters.</p> |

| Parameter           | Type                                       | Description                                                                                                                                                                                                                       |
|---------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description         | String                                     | Provides supplementary information about the load balancer.<br>The value contains a maximum of 255 characters.                                                                                                                    |
| vip_subnet_id       | String                                     | Specifies the ID of the IPv4 subnet where the load balancer works.                                                                                                                                                                |
| vip_port_id         | String                                     | Specifies the ID of the port bound to the private IP address of the load balancer.                                                                                                                                                |
| provider            | String                                     | Specifies the provider of the load balancer.                                                                                                                                                                                      |
| vip_address         | String                                     | Specifies the private IP address of the load balancer.<br>The value contains a maximum of 64 characters.                                                                                                                          |
| listeners           | Array of <a href="#">Listeners</a> objects | Lists the IDs of listeners added to the load balancer. For details, see <a href="#">Table 6-7</a> .                                                                                                                               |
| pools               | Array of <a href="#">Pools</a> objects     | Lists the IDs of backend server groups associated with the load balancer. For details, see <a href="#">Table 6-8</a> .                                                                                                            |
| operating_status    | String                                     | Specifies the operating status of the load balancer. The value can be <b>ONLINE</b> or <b>FROZEN</b> .                                                                                                                            |
| provisioning_status | String                                     | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the load balancer.                                                                                               |
| admin_state_up      | Boolean                                    | Specifies the administrative status of the load balancer. The load balancer stops receiving traffic after it is disabled.<br>Value options:<br><b>true</b> : Enable a load balancer.<br><b>false</b> : Disable the load balancer. |
| tags                | Array                                      | Lists load balancer tags.                                                                                                                                                                                                         |

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| created_at            | String | Specifies the time when the load balancer was created.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.<br>The value contains a maximum of 19 characters.                                                                                                                                                                                                                                                                                                                 |
| updated_at            | String | Specifies the time when the load balancer was updated.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.<br>The value contains a maximum of 19 characters.                                                                                                                                                                                                                                                                                                                 |
| enterprise_project_id | String | Specifies the enterprise project ID. When creating a load balancer, you can assign an enterprise project to the load balancer.<br>The value is character string <b>0</b> or a UUID with hyphens (-). Value <b>0</b> indicates the default enterprise project.<br><b>NOTE</b><br>For more information about enterprise projects and how to obtain enterprise project IDs, see <a href="#">Enterprise Management User Guide</a> .                                                   |
| charge_mode           | String | Specifies how the load balancer will be billed. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>flavor</b>: indicates the guaranteed performance that allows the load balancer to handle up to 50,000 concurrent connections, 5,000 connections and 5,000 queries per second. You will be charged if the load balancer provides guaranteed performance.</li><li>• <b>null</b>: indicates that guaranteed performance is not provided.</li></ul> |
| billing_info          | String | Specifies whether the billing information is left blank.                                                                                                                                                                                                                                                                                                                                                                                                                          |



| Parameter         | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| frozen_scene      | String                               | <p>Specifies the scenario where the load balancer is frozen. If there are multiple scenarios, separate them with commas (,). The value can be one of the following:</p> <ul style="list-style-type: none"><li>● <b>POLICE</b>: The load balancer is frozen for public security.</li><li>● <b>ILLEGAL</b>: The load balancer is frozen due to violation of laws and regulations.</li><li>● <b>VERIFY</b>: The load balancer is frozen because the user fails to pass real-name authentication.</li><li>● <b>PARTNER</b>: The load balancer is frozen by the partner.</li><li>● <b>REAR</b>: Your account is in arrears.</li></ul> |
| protection_status | String                               | <p>Specifies whether modification protection is enabled. The value can be one of the following:</p> <ul style="list-style-type: none"><li>● <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>● <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul>                                                                                                                                                                                                                                                            |
| protection_reason | String                               | <p>Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| publicips         | Array of <b>PublicIpInfo</b> objects | <p>Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

**Table 6-7 listeners** parameter description

| Parameter | Type   | Description                                  |
|-----------|--------|----------------------------------------------|
| id        | String | Specifies the ID of the associated listener. |

**Table 6-8 pools** parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

**Table 6-9 PublicIpInfo**

| Parameter        | Type    | Description                                                                    |
|------------------|---------|--------------------------------------------------------------------------------|
| publicip_id      | String  | Specifies the EIP ID.                                                          |
| publicip_address | String  | Specifies the public IP address.                                               |
| ip_version       | Integer | Specifies the IP version. The value can be <b>4</b> (IPv4) or <b>6</b> (IPv6). |

## Example Request

- Example request 1: Creating a private network load balancer  
POST https://{Endpoint}/v2/1867112d054b427e808cc6096d8193a1/elb/loadbalancers

```
{
 "loadbalancer": {
 "name": "loadbalancer1",
 "description": "simple lb",
 "tenant_id": "1867112d054b427e808cc6096d8193a1",
 "vip_subnet_id": "58077bdb-d470-424b-8c45-2e3c65060a5b",
 "vip_address": "10.0.0.4",
 "admin_state_up": true,
 "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
 }
}
```

## Example Response

- Example response 1

```
{
 "loadbalancer": {
 "description": "",
 "admin_state_up": true,
 "tenant_id": "1867112d054b427e808cc6096d8193a1",
 "project_id": "1867112d054b427e808cc6096d8193a1",
 "provisioning_status": "ACTIVE",
 "vip_subnet_id": "58077bdb-d470-424b-8c45-2e3c65060a5b",
 "listeners": [],
 "vip_address": "10.0.0.4",
 "vip_port_id": "519f6af5-74aa-4347-9dba-84c440192877",
 "provider": "vlb",
 "pools": [],
 "tags": [],
 "id": "b0657373-0c68-41d1-980f-1a44d9e3ff01",
 "operating_status": "ONLINE",
 "name": "loadbalancer1",
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14",
 "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
 }
}
```

```
}
}
```

## Status Code

For details, see [Status Codes](#).

## 6.1.2 Querying Load Balancers

### Function

This API is used to query load balancers and display them in a list. Filter query and pagination query are supported.

Unless otherwise specified, exact match is applied.

### URI

GET /v2/{project\_id}/elb/loadbalancers

**Table 6-10** Path parameters

| Parameter  | Mandatory | Type   | Description               |
|------------|-----------|--------|---------------------------|
| project_id | Yes       | String | Specifies the project ID. |

**Table 6-11** Query parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                           |
|-----------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker    | No        | String  | Specifies the ID of the load balancer from which pagination query starts, that is, the ID of the last load balancer on the previous page.<br>This parameter must be used together with <b>limit</b> . |
| limit     | No        | Integer | Specifies the number of load balancers on each page. If this parameter is not set, all load balancers are queried by default.                                                                         |

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse        | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br><br>This parameter must be used together with <b>limit</b> . |
| id                  | No        | String  | Specifies the load balancer ID.                                                                                                                                                                                                                                                                                                                                                                                                   |
| description         | No        | String  | Provides supplementary information about the load balancer.<br><br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                |
| name                | No        | String  | Specifies the load balancer name.<br><br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                          |
| operating_status    | No        | String  | Specifies the operating status of the load balancer. The value can be <b>ONLINE</b> or <b>FROZEN</b> .                                                                                                                                                                                                                                                                                                                            |
| provisioning_status | No        | String  | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br><br>It specifies the provisioning status of the load balancer.                                                                                                                                                                                                                                                                                           |
| admin_state_up      | No        | Boolean | Specifies the administrative status of the load balancer. The load balancer stops receiving traffic after it is disabled.<br><br>The value can be one of the following:<br><b>true</b> : Enable the load balancer.<br><b>false</b> : Disable the load balancer.                                                                                                                                                                   |
| vip_address         | No        | String  | Specifies the private IP address of the load balancer.<br><br>The value contains a maximum of 64 characters.                                                                                                                                                                                                                                                                                                                      |
| vip_port_id         | No        | String  | Specifies the ID of the port bound to the private IP address of the load balancer.                                                                                                                                                                                                                                                                                                                                                |
| vip_subnet_id       | No        | String  | Specifies the ID of the IPv4 subnet where the load balancer works.                                                                                                                                                                                                                                                                                                                                                                |

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_address        | No        | String | Specifies the IP address of the backend server associated with the load balancer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| member_device_id      | No        | String | Specifies the ID of the cloud server used as the backend server associated with the load balancer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| vpc_id                | No        | String | Specifies the ID of the VPC where the load balancer resides.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| enterprise_project_id | No        | String | <p>Specifies the enterprise project ID.</p> <ul style="list-style-type: none"><li>If <b>enterprise_project_id</b> is not passed, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:*list</b> permissions must be assigned to the user group.</li><li>If <b>enterprise_project_id</b> is passed, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:*list</b> permissions are queried.</li></ul> |

## Request

None

## Response

**Table 6-12** Response parameters

| Parameter     | Type                                  | Description                                                             |
|---------------|---------------------------------------|-------------------------------------------------------------------------|
| loadbalancers | Array of <b>Loadbalancers</b> objects | Lists the load balancers. For details, see <a href="#">Table 6-13</a> . |

**Table 6-13** loadbalancer parameter description

| Parameter | Type   | Description                     |
|-----------|--------|---------------------------------|
| id        | String | Specifies the load balancer ID. |

| Parameter           | Type                                       | Description                                                                                                                         |
|---------------------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| project_id          | String                                     | Specifies the ID of the project where the load balancer is used.                                                                    |
| tenant_id           | String                                     | Specifies the tenant ID.                                                                                                            |
| name                | String                                     | Specifies the load balancer name.<br>The value contains a maximum of 255 characters.                                                |
| description         | String                                     | Provides supplementary information about the load balancer.<br>The value contains a maximum of 255 characters.                      |
| vip_subnet_id       | String                                     | Specifies the ID of the IPv4 subnet where the load balancer works.                                                                  |
| vip_port_id         | String                                     | Specifies the ID of the port bound to the private IP address of the load balancer.                                                  |
| provider            | String                                     | Specifies the provider of the load balancer.                                                                                        |
| vip_address         | String                                     | Specifies the private IP address of the load balancer.<br>The value contains a maximum of 64 characters.                            |
| listeners           | Array of <a href="#">Listeners</a> objects | Lists the IDs of listeners added to the load balancer. For details, see <a href="#">Table 6-7</a> .                                 |
| pools               | Array of <a href="#">Pools</a> objects     | Lists the IDs of backend server groups associated with the load balancer. For details, see <a href="#">Table 6-8</a> .              |
| operating_status    | String                                     | Specifies the operating status of the load balancer. The value can be <b>ONLINE</b> or <b>FROZEN</b> .                              |
| provisioning_status | String                                     | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the load balancer. |

| Parameter             | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up        | Boolean | Specifies the administrative status of the load balancer. The load balancer stops receiving traffic after it is disabled.<br>Value options:<br><b>true</b> : Enable a load balancer.<br><b>false</b> : Disable the load balancer.                                                                                                                                                                                                  |
| tags                  | Array   | Lists load balancer tags.                                                                                                                                                                                                                                                                                                                                                                                                          |
| created_at            | String  | Specifies the time when the load balancer was created.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.<br>The value contains a maximum of 19 characters.                                                                                                                                                                                                                                                                  |
| updated_at            | String  | Specifies the time when the load balancer was updated.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.<br>The value contains a maximum of 19 characters.                                                                                                                                                                                                                                                                  |
| enterprise_project_id | String  | Specifies the enterprise project ID. When creating a load balancer, you can assign an enterprise project to the load balancer.<br>The value is character string <b>0</b> or a UUID with hyphens (-).<br>Value <b>0</b> indicates the default enterprise project.<br><b>NOTE</b><br>For more information about enterprise projects and how to obtain enterprise project IDs, see <a href="#">Enterprise Management User Guide</a> . |

| Parameter    | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| charge_mode  | String | <p>Specifies how the load balancer will be billed. The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>flavor</b>: indicates the guaranteed performance that allows the load balancer to handle up to 50,000 concurrent connections, 5,000 connections and 5,000 queries per second. You will be charged if the load balancer provides guaranteed performance.</li><li>• <b>null</b>: indicates that guaranteed performance is not provided.</li></ul>                                                                                                                                         |
| billing_info | String | <p>Specifies whether the billing information is left blank.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| frozen_scene | String | <p>Specifies the scenario where the load balancer is frozen. If there are multiple scenarios, separate them with commas (.). The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>POLICE</b>: The load balancer is frozen for public security.</li><li>• <b>ILLEGAL</b>: The load balancer is frozen due to violation of laws and regulations.</li><li>• <b>VERIFY</b>: The load balancer is frozen because the user fails to pass real-name authentication.</li><li>• <b>PARTNER</b>: The load balancer is frozen by the partner.</li><li>• <b>REAR</b>: Your account is in arrears.</li></ul> |



| Parameter         | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                    |
|-------------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_status | String                               | Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> |
| protection_reason | String                               | Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .                                                                                                                                                                                                        |
| publicips         | Array of <b>PublicIpInfo</b> objects | Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer.                                                                                                                                                                                                                                                                    |

Table 6-14 listeners parameter description

| Parameter | Type   | Description                                  |
|-----------|--------|----------------------------------------------|
| id        | String | Specifies the ID of the associated listener. |

Table 6-15 pools parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

## Example Request

- Example request 1  
GET https://{Endpoint}/v2/1a3e005cf9ce40308c900bcb08e5320c/elb/loadbalancers
- Example request 2  
GET https://{Endpoint}/v2/1a3e005cf9ce40308c900bcb08e5320c/elb/loadbalancers?limit=10&marker=165b6a38-5278-4569-b747-b2ee65ea84a4
- Example request 3  
GET https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/loadbalancers?member\_address=192.168.0.198

## Example Response

- Example response 1

```
{
 "loadbalancers": [
 {
 "description": "simple lb",
 "admin_state_up": true,
 "tenant_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "project_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "provisioning_status": "ACTIVE",
 "vip_subnet_id": "5328f1e6-ce29-44f1-9493-b128a5653350",
 "listeners": [
 {
 "id": "45196943-2907-4369-87b1-c009b1d7ac35"
 }
],
 "vip_address": "10.0.0.2",
 "vip_port_id": "cbced4fe-6f6f-4fd6-9348-0c3d1219d6ca",
 "provider": "vlb",
 "pools": [
 {
 "id": "21d49cf7-4fd3-4cb6-8c48-b7fc6c259aab"
 }
],
 "id": "a9729389-6147-41a3-ab22-a24aed8692b2",
 "operating_status": "ONLINE",
 "tags": [],
 "name": "loadbalancer1",
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14",
 "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
 }
]
}
```

- Example response 2

```
{
 "loadbalancers": [
 {
 "description": "",
 "provisioning_status": "ACTIVE",
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "admin_state_up": true,
 "provider": "vlb",
 "pools": [
 {
 "id": "b13dba4c-a44c-4c40-8f6e-ce7a162b9f22"
 },
 {
 "id": "4b9e765f-82ee-4128-911b-0a2d9ebc74c7"
 }
],
 "listeners": [
 {
 "id": "21c41336-d0d3-4349-8641-6e82b4a4d097"
 }
],
 "vip_port_id": "44ac5d9b-b0c0-4810-9a9d-c4dbf541e47e",
 "operating_status": "ONLINE",
 "vip_address": "192.168.0.234",
 "vip_subnet_id": "9d60827e-0e5c-490a-8183-0b6ebf9084ca",
 "id": "e79a7dd6-3a38-429a-95f9-c7f78b346cbe",
 "tags": [],
 "name": "elb-robot",
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14",
 "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
 }
]
}
```

- Example response 3

```
{
 "loadbalancers": [
 {
 "description": "",
 "provisioning_status": "ACTIVE",
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "admin_state_up": true,
 "provider": "vlb",
 "pools": [
 {
 "id": "ed75f16e-fcc6-403e-a3fb-4eae82005eab"
 },
 {
 "id": "f15f2723-4135-4bf8-9259-047d92684197"
 }
],
 "listeners": [
 {
 "id": "75045172-70e9-480d-9443-b8b6459948f7"
 },
 {
 "id": "b9a99cbb-d0a1-4269-bc5f-752ec37a10c3"
 }
],
 "vip_port_id": "fb3f10f0-9417-4cf2-a82e-8f1da1687484",
 "operating_status": "ONLINE",
 "vip_address": "192.168.0.16",
 "vip_subnet_id": "3a450aa4-f642-4da8-b70d-cafd4a633b51",
 "id": "bc7ba445-035a-4464-a1a3-a62cf4a14116",
 "tags": [],
 "name": "elb-hm-test",
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14",
 "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
 }
]
}
```

## Status Code

For details, see [Status Codes](#).

## 6.1.3 Querying Details of a Load Balancer

### Function

This API is used to query details about a load balancer using its ID.

### URI

GET /v2/{project\_id}/elb/loadbalancers/{loadbalancer\_id}

Table 6-16 Parameter description

| Parameter       | Mandatory | Type   | Description                     |
|-----------------|-----------|--------|---------------------------------|
| project_id      | Yes       | String | Specifies the project ID.       |
| loadbalancer_id | Yes       | String | Specifies the load balancer ID. |

Request

None

Response

Table 6-17 Response parameters

| Parameter    | Type                                | Description                                                                |
|--------------|-------------------------------------|----------------------------------------------------------------------------|
| loadbalancer | <a href="#">Loadbalancer</a> object | Specifies the load balancer. For details, see <a href="#">Table 6-18</a> . |

Table 6-18 loadbalancer parameter description

| Parameter     | Type   | Description                                                                                                    |
|---------------|--------|----------------------------------------------------------------------------------------------------------------|
| id            | String | Specifies the load balancer ID.                                                                                |
| project_id    | String | Specifies the ID of the project where the load balancer is used.                                               |
| tenant_id     | String | Specifies the tenant ID.                                                                                       |
| name          | String | Specifies the load balancer name.<br>The value contains a maximum of 255 characters.                           |
| description   | String | Provides supplementary information about the load balancer.<br>The value contains a maximum of 255 characters. |
| vip_subnet_id | String | Specifies the ID of the IPv4 subnet where the load balancer works.                                             |
| vip_port_id   | String | Specifies the ID of the port bound to the private IP address of the load balancer.                             |

| Parameter           | Type                                       | Description                                                                                                                                                                                                                       |
|---------------------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| provider            | String                                     | Specifies the provider of the load balancer.                                                                                                                                                                                      |
| vip_address         | String                                     | Specifies the private IP address of the load balancer.<br>The value contains a maximum of 64 characters.                                                                                                                          |
| listeners           | Array of <a href="#">Listeners</a> objects | Lists the IDs of listeners added to the load balancer. For details, see <a href="#">Table 6-7</a> .                                                                                                                               |
| pools               | Array of <a href="#">Pools</a> objects     | Lists the IDs of backend server groups associated with the load balancer. For details, see <a href="#">Table 6-8</a> .                                                                                                            |
| operating_status    | String                                     | Specifies the operating status of the load balancer. The value can be <b>ONLINE</b> or <b>FROZEN</b> .                                                                                                                            |
| provisioning_status | String                                     | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the load balancer.                                                                                               |
| admin_state_up      | Boolean                                    | Specifies the administrative status of the load balancer. The load balancer stops receiving traffic after it is disabled.<br>Value options:<br><b>true</b> : Enable a load balancer.<br><b>false</b> : Disable the load balancer. |
| tags                | Array                                      | Lists load balancer tags.                                                                                                                                                                                                         |
| created_at          | String                                     | Specifies the time when the load balancer was created.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.<br>The value contains a maximum of 19 characters.                                                                 |
| updated_at          | String                                     | Specifies the time when the load balancer was updated.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.<br>The value contains a maximum of 19 characters.                                                                 |

| Parameter             | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | String | <p>Specifies the enterprise project ID. When creating a load balancer, you can assign an enterprise project to the load balancer.</p> <p>The value is character string <b>0</b> or a UUID with hyphens (-). Value <b>0</b> indicates the default enterprise project.</p> <p><b>NOTE</b></p> <p>For more information about enterprise projects and how to obtain enterprise project IDs, see <a href="#">Enterprise Management User Guide</a>.</p>                                        |
| charge_mode           | String | <p>Specifies how the load balancer will be billed. The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>flavor</b>: indicates the guaranteed performance that allows the load balancer to handle up to 50,000 concurrent connections, 5,000 connections and 5,000 queries per second. You will be charged if the load balancer provides guaranteed performance.</li><li>• <b>null</b>: indicates that guaranteed performance is not provided.</li></ul> |
| billing_info          | String | <p>Specifies whether the billing information is left blank.</p>                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Parameter         | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| frozen_scene      | String                               | <p>Specifies the scenario where the load balancer is frozen. If there are multiple scenarios, separate them with commas (,). The value can be one of the following:</p> <ul style="list-style-type: none"><li>● <b>POLICE</b>: The load balancer is frozen for public security.</li><li>● <b>ILLEGAL</b>: The load balancer is frozen due to violation of laws and regulations.</li><li>● <b>VERIFY</b>: The load balancer is frozen because the user fails to pass real-name authentication.</li><li>● <b>PARTNER</b>: The load balancer is frozen by the partner.</li><li>● <b>REAR</b>: Your account is in arrears.</li></ul> |
| protection_status | String                               | <p>Specifies whether modification protection is enabled. The value can be one of the following:</p> <ul style="list-style-type: none"><li>● <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>● <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul>                                                                                                                                                                                                                                                            |
| protection_reason | String                               | <p>Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| publicips         | Array of <b>PublicIpInfo</b> objects | <p>Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

**Table 6-19 listeners** parameter description

| Parameter | Type   | Description                                  |
|-----------|--------|----------------------------------------------|
| id        | String | Specifies the ID of the associated listener. |

**Table 6-20** pools parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

## Example Request

- Example request  
GET https://{Endpoint}/v2/1867112d054b427e808cc6096d8193a1/elb/loadbalancers/  
3d77894d-2ffe-4411-ac0a-0d57689779b8

## Example Response

- Example response

```
{
 "loadbalancer": {
 "description": "",
 "admin_state_up": true,
 "tenant_id": "1867112d054b427e808cc6096d8193a1",
 "project_id": "1867112d054b427e808cc6096d8193a1",
 "provisioning_status": "ACTIVE",
 "vip_subnet_id": "4f5e8efe-fbbe-405e-b48c-a41202ef697c",
 "listeners": [
 {
 "id": "09e64049-2ab0-4763-a8c5-f4207875dc3e"
 }
],
 "vip_address": "192.168.2.4",
 "vip_port_id": "c7157e7a-036a-42ca-8474-100be22e3727",
 "provider": "vlb",
 "pools": [
 {
 "id": "b7e53dbd-62ab-4505-a280-5c066078a5c9"
 }
],
 "id": "3d77894d-2ffe-4411-ac0a-0d57689779b8",
 "operating_status": "ONLINE",
 "tags": [],
 "name": "lb-2",
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14",
 "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
 }
}
```

## Status Code

For details, see [Status Codes](#).

## 6.1.4 Querying the Status Tree of a Load Balancer

### Function

This API is used to query the status tree of a load balancer. You can use this API to query details about the associated listeners, backend server groups, backend servers, health checks, forwarding policies, and forwarding rules, helping you understand the topology of resources associated with the load balancer.



## URI

GET /v2/{project\_id}/elb/loadbalancers/{loadbalancer\_id}/statuses

**Table 6-21** Parameter description

| Parameter       | Mandatory | Type   | Description                     |
|-----------------|-----------|--------|---------------------------------|
| project_id      | Yes       | String | Specifies the project ID.       |
| loadbalancer_id | Yes       | String | Specifies the load balancer ID. |

## Request

None

## Response

**Table 6-22** Parameter description

| Parameter | Type                            | Description                                                                                 |
|-----------|---------------------------------|---------------------------------------------------------------------------------------------|
| statuses  | <a href="#">Statuses</a> object | Specifies the status tree of a load balancer. For details, see <a href="#">Table 6-23</a> . |

**Table 6-23** [statuses](#) parameter description

| Parameter    | Type                                | Description                                                                |
|--------------|-------------------------------------|----------------------------------------------------------------------------|
| loadbalancer | <a href="#">Loadbalancer</a> object | Specifies the load balancer. For details, see <a href="#">Table 6-24</a> . |

**Table 6-24** [loadbalancer](#) parameter description

| Parameter | Type                                       | Description                                                                                                     |
|-----------|--------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| id        | String                                     | Specifies the load balancer ID.                                                                                 |
| name      | String                                     | Specifies the load balancer name.<br>The value contains a maximum of 255 characters.                            |
| listeners | Array of <a href="#">Listeners</a> objects | Lists the listeners added to the load balancer. For details of this parameter, see <a href="#">Table 6-25</a> . |

| Parameter           | Type                                   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pools               | Array of <a href="#">Pools</a> objects | Lists the backend server groups associated with the load balancer. For details of this parameter, see <a href="#">Table 6-26</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| operating_status    | String                                 | <p>This field is reserved.</p> <p>It specifies the operating status of the load balancer. The value can be one of the following:</p> <ul style="list-style-type: none"><li>● <b>ONLINE</b> (default): The load balancer is running normally.</li><li>● <b>DEGRADED</b>: This status is displayed only when <b>provisioning_status</b> of a forwarding policy or forwarding rule added to a listener of the load balancer is set to <b>ERROR</b> and the API for querying the load balancer status tree is called.</li><li>● <b>DISABLED</b>: This status is displayed only when <b>admin_state_up</b> of the load balancer is set to <b>false</b> and the API for querying the load balancer status tree is called.</li><li>● <b>FROZEN</b>: The load balancer is frozen.</li></ul> |
| provisioning_status | String                                 | <p>This parameter is reserved, and its value can only be <b>ACTIVE</b>.</p> <p>It specifies the provisioning status of the load balancer.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

**Table 6-25** listeners parameter description

| Parameter  | Type                                        | Description                                                                                           |
|------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------|
| id         | String                                      | Specifies the listener ID.                                                                            |
| name       | String                                      | Specifies the listener name.                                                                          |
| l7policies | Array of <a href="#">l7policies</a> objects | Lists associated forwarding policies. For details of this parameter, see <a href="#">Table 6-29</a> . |

| Parameter           | Type                                   | Description                                                                                                                   |
|---------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| pools               | Array of <a href="#">Pools</a> objects | Lists the backend server groups associated with the listener. For details of this parameter, see <a href="#">Table 6-26</a> . |
| operating_status    | String                                 | This parameter is reserved, and its value can only be <b>ONLINE</b> . It specifies the operating status of the listener.      |
| provisioning_status | String                                 | This parameter is reserved, and its value can only be <b>ACTIVE</b> . It specifies the provisioning status of the listener.   |

**Table 6-26** pools parameter description

| Parameter           | Type                                     | Description                                                                                                                             |
|---------------------|------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|
| id                  | String                                   | Specifies the ID of the backend server group.                                                                                           |
| name                | String                                   | Specifies the name of the backend server group.                                                                                         |
| healthmonitor       | <a href="#">Healthmonitor</a> object     | Provides health check details of the backend server group. For details of this parameter, see <a href="#">Table 6-27</a> .              |
| members             | Array of <a href="#">Members</a> objects | Lists the members contained in the backend server group. For details of this parameter, see <a href="#">Table 6-28</a> .                |
| operating_status    | String                                   | This parameter is reserved, and its value can only be <b>ONLINE</b> . It specifies the operating status of the backend server group.    |
| provisioning_status | String                                   | This parameter is reserved, and its value can only be <b>ACTIVE</b> . It specifies the provisioning status of the backend server group. |

**Table 6-27 healthmonitor** parameter description

| Parameter           | Type   | Description                                                                                                                                                   |
|---------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                  | String | Specifies the health check ID.                                                                                                                                |
| name                | String | Specifies the health check name.                                                                                                                              |
| type                | String | <ul style="list-style-type: none"><li>Specifies the health check protocol.</li><li>The value can be <b>UDP_CONNECT</b>, <b>TCP</b>, or <b>HTTP</b>.</li></ul> |
| provisioning_status | String | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the health check.                            |

**Table 6-28 members** parameter description

| Parameter     | Type    | Description                                                                                                                                    |
|---------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------|
| id            | String  | Specifies the backend server ID.                                                                                                               |
| address       | String  | Specifies the private IP address of the backend server, for example, 192.168.3.11.                                                             |
| protocol_port | Integer | <ul style="list-style-type: none"><li>Specifies the port used by the backend server.</li><li>The port number ranges from 0 to 65535.</li></ul> |

| Parameter           | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status    | String | <p>This parameter is reserved. It specifies the operating status of the backend server. The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>ONLINE</b>: The backend server is running normally.</li><li>• <b>NO_MONITOR</b>: No health check is configured for the backend server group that the backend server belongs to.</li><li>• <b>DISABLED</b>: The backend server is not available. This status is displayed only when <b>admin_state_up</b> of the backend server, or the backend server group to which it belongs, or the associated load balancer is set to <b>false</b> and the API for querying the load balancer status tree is called.</li><li>• <b>OFFLINE</b>: The cloud server used as the backend server is stopped or does not exist.</li></ul> <p><b>NOTE</b><br/>When <b>admin_state_up</b> is set to <b>false</b> and <b>operating_status</b> is set to <b>OFFLINE</b> for a backend server, <b>DISABLED</b> is returned for <b>operating_status</b> of the backend server in the response of this API.</p> |
| provisioning_status | String | <p>This parameter is reserved, and its value can only be <b>ACTIVE</b>. It specifies the provisioning status of the backend server.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

**Table 6-29** l7policies parameter description

| Parameter | Type   | Description                           |
|-----------|--------|---------------------------------------|
| id        | String | Specifies the forwarding policy ID.   |
| name      | String | Specifies the forwarding policy name. |

| Parameter           | Type                                   | Description                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rules               | Array of <a href="#">Rules</a> objects | Lists the forwarding rules of the forwarding policy. For details of this parameter, see <a href="#">Table 6-30</a> .                                                                                                                                                                                                                                                                                              |
| action              | String                                 | <ul style="list-style-type: none"><li>Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener.</li><li>The value can be <b>REDIRECT_TO_POOL</b> or <b>REDIRECT_TO_LISTENER</b>.<br/><b>REDIRECT_TO_POOL</b>: Requests are forwarded to another backend server group.<br/><b>REDIRECT_TO_LISTENER</b>: Requests are redirected to an HTTPS listener.</li></ul> |
| provisioning_status | String                                 | <p>This parameter is reserved.</p> <p>It specifies the provisioning status of the forwarding policy. The value can be one of the following:</p> <ul style="list-style-type: none"><li><b>ACTIVE</b> (default): The forwarding policy is normal.</li><li><b>ERROR</b>: Another forwarding policy of the same listener has the same forwarding rule.</li></ul>                                                      |

**Table 6-30** rules parameter description

| Parameter | Type   | Description                                                                                                                                                                                                                                                      |
|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | String | Specifies the forwarding rule ID.                                                                                                                                                                                                                                |
| type      | String | <ul style="list-style-type: none"><li>Specifies the match type of a forwarding rule.</li><li>The value can be <b>PATH</b> or <b>HOST_NAME</b>. <b>PATH</b>: matches the path in the request. <b>HOST_NAME</b>: matches the domain name in the request.</li></ul> |

| Parameter           | Type   | Description                                                                                                                                                                                                                                                                                                                                                  |
|---------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | String | <p>This parameter is reserved.</p> <p>It specifies the provisioning status of the forwarding rule. The value can be one of the following:</p> <ul style="list-style-type: none"><li>● <b>ACTIVE</b> (default): The forwarding rule is normal.</li><li>● <b>ERROR</b>: Another forwarding policy of the same listener has the same forwarding rule.</li></ul> |

## Example Request

- Example request

GET https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/loadbalancers/38278031-cfca-44be-81be-a412f618773b/statuses

## Example Response

- Example response

```
{
 "statuses": {
 "loadbalancer": {
 "name": "lb-jy",
 "provisioning_status": "ACTIVE",
 "listeners": [
 {
 "name": "listener-jy-1",
 "provisioning_status": "ACTIVE",
 "pools": [
 {
 "name": "pool-jy-1",
 "provisioning_status": "ACTIVE",
 "healthmonitor": {
 "type": "TCP",
 "id": "7422b51a-0ed2-4702-9429-4f88349276c6",
 "name": "",
 "provisioning_status": "ACTIVE"
 },
 "members": [
 {
 "protocol_port": 80,
 "address": "192.168.44.11",
 "id": "7bbf7151-0dce-4087-b316-06c7fa17b894",
 "operating_status": "ONLINE",
 "provisioning_status": "ACTIVE"
 }
]
 }
],
 "id": "c54b3286-2349-4c5c-ade1-e6bb0b26ad18",
 "operating_status": "ONLINE"
 }
],
 "l7policies": [],
 "id": "eb84c5b4-9bc5-4bee-939d-3900fb05dc7b",
 "operating_status": "ONLINE"
 }
 },
 "id": "c54b3286-2349-4c5c-ade1-e6bb0b26ad18",
 "operating_status": "ONLINE"
}
```

```
"pools": [
 {
 "name": "pool-jy-1",
 "provisioning_status": "ACTIVE",
 "healthmonitor": {
 "type": "TCP",
 "id": "7422b51a-0ed2-4702-9429-4f88349276c6",
 "name": "",
 "provisioning_status": "ACTIVE"
 },
 "members": [
 {
 "protocol_port": 80,
 "address": "192.168.44.11",
 "id": "7bbf7151-0dce-4087-b316-06c7fa17b894",
 "operating_status": "ONLINE",
 "provisioning_status": "ACTIVE"
 }
],
 "id": "c54b3286-2349-4c5c-ade1-e6bb0b26ad18",
 "operating_status": "ONLINE"
 },
 {
 "id": "38278031-cfca-44be-81be-a412f618773b",
 "operating_status": "ONLINE"
 }
]
```

Status Code

For details, see [Status Codes](#).

6.1.5 Updating a Load Balancer

Function

This API is used to update the name or description of a load balancer.

URI

PUT /v2/{project\_id}/elb/loadbalancers/{loadbalancer\_id}

Table 6-31 Parameter description

| Parameter       | Mandatory | Type   | Description                     |
|-----------------|-----------|--------|---------------------------------|
| project_id      | Yes       | String | Specifies the project ID.       |
| loadbalancer_id | Yes       | String | Specifies the load balancer ID. |



## Request

**Table 6-32** Parameter description

| Parameter    | Mandatory | Type                                | Description                                                                |
|--------------|-----------|-------------------------------------|----------------------------------------------------------------------------|
| loadbalancer | Yes       | <a href="#">Loadbalancer</a> object | Specifies the load balancer. For details, see <a href="#">Table 6-33</a> . |

**Table 6-33** loadbalancer parameter description

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                 |
|----------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name           | No        | String  | Specifies the load balancer name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                        |
| description    | No        | String  | Provides supplementary information about the load balancer.<br>The value contains a maximum of 255 characters.                                                                                                                                              |
| admin_state_up | No        | Boolean | Specifies the administrative status of the load balancer. The load balancer stops receiving traffic after it is disabled.<br>The value can be one of the following:<br><b>true</b> : Enable the load balancer.<br><b>false</b> : Disable the load balancer. |

| Parameter         | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                    |
|-------------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_status | No        | String | Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> |
| protection_reason | No        | String | Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .                                                                                                                                                                                                        |

## Response

**Table 6-34** Response parameters

| Parameter    | Type                       | Description                                                                |
|--------------|----------------------------|----------------------------------------------------------------------------|
| loadbalancer | <b>Loadbalancer</b> object | Specifies the load balancer. For details, see <a href="#">Table 6-35</a> . |

**Table 6-35** loadbalancer parameter description

| Parameter  | Type   | Description                                                      |
|------------|--------|------------------------------------------------------------------|
| id         | String | Specifies the load balancer ID.                                  |
| project_id | String | Specifies the ID of the project where the load balancer is used. |
| tenant_id  | String | Specifies the tenant ID.                                         |

| Parameter           | Type                                       | Description                                                                                                                         |
|---------------------|--------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| name                | String                                     | Specifies the load balancer name.<br>The value contains a maximum of 255 characters.                                                |
| description         | String                                     | Provides supplementary information about the load balancer.<br>The value contains a maximum of 255 characters.                      |
| vip_subnet_id       | String                                     | Specifies the ID of the IPv4 subnet where the load balancer works.                                                                  |
| vip_port_id         | String                                     | Specifies the ID of the port bound to the private IP address of the load balancer.                                                  |
| provider            | String                                     | Specifies the provider of the load balancer.                                                                                        |
| vip_address         | String                                     | Specifies the private IP address of the load balancer.<br>The value contains a maximum of 64 characters.                            |
| listeners           | Array of <a href="#">Listeners</a> objects | Lists the IDs of listeners added to the load balancer. For details, see <a href="#">Table 6-7</a> .                                 |
| pools               | Array of <a href="#">Pools</a> objects     | Lists the IDs of backend server groups associated with the load balancer. For details, see <a href="#">Table 6-8</a> .              |
| operating_status    | String                                     | Specifies the operating status of the load balancer. The value can be <b>ONLINE</b> or <b>FROZEN</b> .                              |
| provisioning_status | String                                     | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the load balancer. |

| Parameter             | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up        | Boolean | <p>Specifies the administrative status of the load balancer. The load balancer stops receiving traffic after it is disabled.</p> <p>Value options:</p> <p><b>true:</b> Enable a load balancer.</p> <p><b>false:</b> Disable the load balancer.</p>                                                                                                                                                                                                |
| tags                  | Array   | <p>Lists load balancer tags.</p>                                                                                                                                                                                                                                                                                                                                                                                                                  |
| created_at            | String  | <p>Specifies the time when the load balancer was created.</p> <p>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.</p> <p>The value contains a maximum of 19 characters.</p>                                                                                                                                                                                                                                                                  |
| updated_at            | String  | <p>Specifies the time when the load balancer was updated.</p> <p>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.</p> <p>The value contains a maximum of 19 characters.</p>                                                                                                                                                                                                                                                                  |
| enterprise_project_id | String  | <p>Specifies the enterprise project ID. When creating a load balancer, you can assign an enterprise project to the load balancer.</p> <p>The value is character string <b>0</b> or a UUID with hyphens (-). Value <b>0</b> indicates the default enterprise project.</p> <p><b>NOTE</b></p> <p>For more information about enterprise projects and how to obtain enterprise project IDs, see <a href="#">Enterprise Management User Guide</a>.</p> |

| Parameter    | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| charge_mode  | String | <p>Specifies how the load balancer will be billed. The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>flavor</b>: indicates the guaranteed performance that allows the load balancer to handle up to 50,000 concurrent connections, 5,000 connections and 5,000 queries per second. You will be charged if the load balancer provides guaranteed performance.</li><li>• <b>null</b>: indicates that guaranteed performance is not provided.</li></ul>                                                                                                                                         |
| billing_info | String | <p>Specifies whether the billing information is left blank.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| frozen_scene | String | <p>Specifies the scenario where the load balancer is frozen. If there are multiple scenarios, separate them with commas (.). The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>POLICE</b>: The load balancer is frozen for public security.</li><li>• <b>ILLEGAL</b>: The load balancer is frozen due to violation of laws and regulations.</li><li>• <b>VERIFY</b>: The load balancer is frozen because the user fails to pass real-name authentication.</li><li>• <b>PARTNER</b>: The load balancer is frozen by the partner.</li><li>• <b>REAR</b>: Your account is in arrears.</li></ul> |

| Parameter         | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                    |
|-------------------|--------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_status | String                               | Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> |
| protection_reason | String                               | Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .                                                                                                                                                                                                        |
| publicips         | Array of <b>PublicIpInfo</b> objects | Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer.                                                                                                                                                                                                                                                                    |

Table 6-36 listeners parameter description

| Parameter | Type   | Description                                  |
|-----------|--------|----------------------------------------------|
| id        | String | Specifies the ID of the associated listener. |

Table 6-37 pools parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

## Example Request

- Example request  
PUT https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/loadbalancers/  
1e11b74e-30b7-4b78-b09b-84aec4a04487  

```
{
 "loadbalancer": {
 "name": "lb_update_test",
 "description": "lb update test"
 }
}
```

## Example Response

- Example response

```
{
 "loadbalancer": {
 "description": "simple lb2",
 "admin_state_up": true,
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "provisioning_status": "ACTIVE",
 "vip_subnet_id": "823d5866-6e30-45c2-9b1a-a1ebc3757fdb",
 "listeners": [
 {
 "id": "37ffe679-08ef-436e-b6bd-cf66fb4c3de2"
 }
],
 "vip_address": "192.172.1.68",
 "vip_port_id": "f42e3019-67f7-4d2a-8d1c-af49e7c22fa6",
 "provider": "vlb",
 "tags": [],
 "pools": [
 {
 "id": "75c4f2d4-a213-4408-9fa8-d64708e8d1df"
 }
],
 "id": "c32a9f9a-0cc6-4f38-bb9c-cde79a533c19",
 "operating_status": "ONLINE",
 "name": "loadbalancer-test2",
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14",
 "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
 }
}
```

## Status Code

For details, see [Status Codes](#).

## 6.1.6 Deleting a Load Balancer

### Function

This API is used to delete a load balancer by ID.

### Constraints

When you set **cascade** to **false**, you must delete the resources associated with the load balancer before attempting to delete it.

### URI

DELETE /v2/{project\_id}/elb/loadbalancers/{loadbalancer\_id}

**Table 6-38** Parameter description

| Parameter  | Mandator<br>y | Type       | Description               |
|------------|---------------|------------|---------------------------|
| project_id | Yes           | Strin<br>g | Specifies the project ID. |

| Parameter       | Mandatory | Type    | Description                                                                                                                                                          |
|-----------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer_id | Yes       | String  | Specifies the load balancer ID.                                                                                                                                      |
| cascade         | No        | Boolean | Specifies whether to delete the resources associated with the load balancer when it is deleted, including the listeners, backend server groups, and backend servers. |

## Request

None

## Response

None

## Example Request

- Example request  
DELETE https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/loadbalancers/  
90f7c765-0bc9-47c4-8513-4cc0c264c8f8

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

# 6.2 Listener

## 6.2.1 Adding a Listener

### Function

This API is used to add a listener to a load balancer.

### Constraints

- Only users with the ELB administrator permissions can specify the value of **connection\_limit**.
- The value of **protocol** can be **TCP**, **HTTP**, **UDP**, or **TERMINATED\_HTTPS**.



## URI

POST /v2/{project\_id}/elb/listeners

**Table 6-39** Parameter description

| Parameter  | Mandatory | Type   | Description               |
|------------|-----------|--------|---------------------------|
| project_id | Yes       | String | Specifies the project ID. |

## Request

**Table 6-40** Parameter description

| Parameter | Mandatory | Type                            | Description                                                           |
|-----------|-----------|---------------------------------|-----------------------------------------------------------------------|
| listener  | Yes       | <a href="#">Listener</a> object | Specifies the listener. For details, see <a href="#">Table 6-41</a> . |

**Table 6-41** listener parameter description

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                            |
|-------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id   | No        | String | Specifies the ID of the project where the listener is used.<br><br>The value must be the same as the value of <b>project_id</b> in the token.<br><br>The value contains a maximum of 255 characters.   |
| name        | No        | String | Specifies the listener name.<br><br>Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details.<br><br>The value contains a maximum of 255 characters. |
| description | No        | String | Provides supplementary information about the listener.<br><br>The value contains a maximum of 255 characters.                                                                                          |

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                            |
|------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol         | Yes       | String  | Specifies the protocol used by the listener.<br>The value can be <b>TCP</b> , <b>HTTP</b> , <b>UDP</b> , or <b>TERMINATED_HTTPS</b> .                                                                                                                                                                                                                                  |
| protocol_port    | Yes       | Integer | Specifies the port used by the listener.<br>The port number ranges from 1 to 65535.<br><b>NOTE</b> <ul style="list-style-type: none"><li>If the protocol used by the listener is UDP, the port number cannot be 4789.</li><li>HTTP and TERMINATED_HTTPS listeners cannot use port 21.</li></ul>                                                                        |
| loadbalancer_id  | Yes       | String  | Specifies the ID of the associated load balancer.                                                                                                                                                                                                                                                                                                                      |
| connection_limit | No        | Integer | Specifies the maximum number of connections.<br>The value ranges from <b>-1</b> to <b>2147483647</b> . The default value is <b>-1</b> , indicating that there is no restriction on the maximum number of connections.<br>This parameter is reserved.                                                                                                                   |
| admin_state_up   | No        | Boolean | Specifies the administrative status of the listener.<br>This parameter is reserved, and the default value is <b>true</b> .                                                                                                                                                                                                                                             |
| http2_enable     | No        | Boolean | Specifies whether to use HTTP/2.<br>The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li><b>true</b>: HTTP/2 will be used.</li><li><b>false</b>: HTTP/2 will not be used.</li></ul> The default value is <b>false</b> .<br>This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> . |

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| default_pool_id | No        | String | <p>Specifies the ID of the associated backend server group.</p> <p>If a request does not match the forwarding policy, the request is forwarded to the default backend server group for processing. If the value is <b>null</b>, the listener has no default backend server group.</p> <p>The <b>default_pool_id</b> parameter has the following constraints:</p> <ul style="list-style-type: none"><li>• Its value cannot be the ID of any backend server group of other listeners.</li><li>• Its value cannot be the ID of any backend server group associated with the forwarding policies set for other listeners.</li></ul> <p>The relationships between the protocol of the backend server group and the protocol used by the listener are as follows:</p> <ul style="list-style-type: none"><li>• When the protocol used by the listener is <b>TCP</b>, the protocol of the backend server group must be <b>TCP</b>.</li><li>• When the protocol used by the listener is <b>UDP</b>, the protocol of the backend server group must be <b>UDP</b>.</li><li>• When the protocol used by the listener is <b>HTTP</b> or <b>TERMINATED_HTTPS</b>, the protocol of the backend server group must be <b>HTTP</b>.</li></ul> |

| Parameter                   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| default_tls_container_ref   | No        | String | <p>Specifies the ID of the server certificate used by the listener.</p> <p>This parameter is mandatory when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b>.</p> <p>The default value is <b>null</b> when <b>protocol</b> is not set to <b>TERMINATED_HTTPS</b>.</p> <p>The value contains a maximum of 128 characters.</p> <p><b>NOTE</b><br/>This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b>.</p> |
| client_ca_tls_container_ref | No        | String | <p>Specifies the ID of the CA certificate used by the listener.</p> <p>The default value is <b>null</b>.</p> <p>The value contains a maximum of 128 characters.</p> <p><b>NOTE</b><br/>This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b>.</p>                                                                                                                                                           |
| sni_container_refs          | No        | Array  | <p>Lists the IDs of SNI certificates (server certificates with domain names) used by the listener.</p> <p>If the parameter value is an empty list, the SNI feature is disabled.</p> <p>The default value is [].</p> <p><b>NOTE</b><br/>This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b>.</p>                                                                                                           |

| Parameter          | Mandatory | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------|-----------|--------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| insert_headers     | No        | <a href="#">InsertHeaders</a> object | <p>Specifies whether to insert HTTP extension headers and sent them to backend servers. All headers are synchronized. If this parameter is not set, default values are used.</p> <p>Information required by backend servers can be written into HTTP headers and passed to backend servers.</p> <p>For example, you can use the <b>X-Forwarded-ELB-IP</b> header to transmit the load balancer EIP to backend servers. For details, see <a href="#">Table 6-42</a>.</p> <p><b>NOTE</b><br/>This parameter takes effect only when the protocol used by the listener is set to <b>HTTP</b> or <b>TERMINATED_HTTPS</b>.</p> |
| tls_ciphers_policy | No        | String                               | <p>Specifies the security policy used by the listener. This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b>.</p> <p>The value can be <b>tls-1-0-inherit</b>, <b>tls-1-0</b>, <b>tls-1-1</b>, <b>tls-1-2</b>, or <b>tls-1-2-strict</b>, and the default value is <b>tls-1-0</b>. For details of cipher suites for each security policy, see <a href="#">Table 6-43</a>.</p>                                                                                                                                                                                          |
| protection_status  | No        | String                               | <p>Specifies whether modification protection is enabled. The value can be one of the following:</p> <ul style="list-style-type: none"><li>● <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>● <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul>                                                                                                                                                                                                                                                    |
| protection_reason  | No        | String                               | <p>Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

Table 6-42 insert\_headers parameter description

| Parameter          | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-ELB-IP | No        | Boolean | Specifies whether to transparently transmit the load balancer EIP to backend servers. After this function is enabled, the load balancer EIP is stored in the HTTP header and passes to backend servers.<br><br>The value can be <b>true</b> or <b>false</b> .<br><b>true</b> : This function is enabled.<br><b>false</b> : The function is disabled.<br><br>The function is disabled by default. |
| X-Forwarded-Host   | No        | Boolean | Specifies whether to rewrite the <b>X-Forwarded-Host</b> header. If this function is enabled, <b>X-Forwarded-Host</b> is rewritten based on <b>Host</b> in the request and sent to backend servers.<br><br>The value can be <b>true</b> or <b>false</b> .<br><b>true</b> : This function is enabled.<br><b>false</b> : The function is disabled.<br><br>The function is enabled by default.      |

Table 6-43 tls\_ciphers\_policy parameter description

| Security Policy | TLS Version                | Cipher Suite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-0-inherit | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA:DHE-DSS-AES128-SHA:CAMELLIA128-SHA:EDH-RSA-DES-CBC3-SHA:DES-CBC3-SHA:ECDHE-RSA-RC4-SHA:RC4-SHA:DHE-RSA-AES256-SHA:DHE-DSS-AES256-SHA:DHE-RSA-CAMELLIA256-SHA:DHE-DSS-CAMELLIA256-SHA:CAMELLIA256-SHA:EDH-DSS-DES-CBC3-SHA:DHE-RSA-CAMELLIA128-SHA:DHE-DSS-CAMELLIA128-SHA |

| Security Policy | TLS Version                | Cipher Suite                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-0         | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA |
| tls-1-1         | TLS 1.2 TLS 1.1            |                                                                                                                                                                                                                                                                                                                                                                                                       |
| tls-1-2         | TLS 1.2                    |                                                                                                                                                                                                                                                                                                                                                                                                       |
| tls-1-2-strict  | TLS 1.2                    | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384                                                                                                               |

## Response

**Table 6-44** Response parameters

| Parameter | Type                            | Description                                                           |
|-----------|---------------------------------|-----------------------------------------------------------------------|
| listener  | <a href="#">Listener</a> object | Specifies the listener. For details, see <a href="#">Table 6-45</a> . |

**Table 6-45** listener parameter description

| Parameter  | Type   | Description                                                                                                              |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------|
| id         | String | Specifies the listener ID.                                                                                               |
| tenant_id  | String | Specifies the ID of the project where the listener is used.<br>The value contains a maximum of 255 characters.           |
| project_id | String | Specifies the ID of the project to which the listener belongs. This parameter has the same meaning as <b>tenant_id</b> . |

| Parameter        | Type                                  | Description                                                                                                                                                                                                                                                                                                               |
|------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name             | String                                | Specifies the listener name.<br>Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details.<br>The value contains a maximum of 255 characters.                                                                                                                            |
| description      | String                                | Provides supplementary information about the listener.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                 |
| protocol         | String                                | Specifies the protocol used by the listener.<br>The value can be <b>TCP</b> , <b>HTTP</b> , <b>UDP</b> , or <b>TERMINATED_HTTPS</b> .                                                                                                                                                                                     |
| protocol_port    | Integer                               | Specifies the port used by the listener.<br>The port number ranges from 1 to 65535.                                                                                                                                                                                                                                       |
| loadbalancers    | Array of <b>Loadbalancers</b> objects | Specifies the ID of the associated load balancer. For details, see <a href="#">Table 6-46</a> .                                                                                                                                                                                                                           |
| connection_limit | Integer                               | Specifies the maximum number of connections.<br>The value ranges from <b>-1</b> to <b>2147483647</b> . The default value is <b>-1</b> , indicating that there is no restriction on the maximum number of connections.<br>This parameter is reserved.                                                                      |
| admin_state_up   | Boolean                               | Specifies the administrative status of the listener.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>● <b>true</b>: Enabled</li><li>● <b>false</b>: Disabled</li></ul>                                                                                |
| http2_enable     | Boolean                               | Specifies whether to use HTTP/2.<br>The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>● <b>true</b>: HTTP/2 is used.</li><li>● <b>false</b>: HTTP/2 is not used.</li></ul> This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> . |



| Parameter                   | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| default_pool_id             | String                               | Specifies the ID of the associated backend server group.<br><br>If a request does not match the forwarding policy, the request is forwarded to the default backend server group for processing. If the value is <b>null</b> , the listener has no default backend server group.                                                                                                                                                                                   |
| default_tls_container_ref   | String                               | Specifies the ID of the server certificate used by the listener. For details, see <a href="#">Certificate</a> .<br><br>This parameter is mandatory when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b> .<br><br>The value contains a maximum of 128 characters.                                                                                                                                                                                                |
| client_ca_tls_container_ref | String                               | Specifies the ID of the CA certificate used by the listener.<br><br>The value contains a maximum of 128 characters.<br><br>For details, see <a href="#">Certificate</a> .                                                                                                                                                                                                                                                                                         |
| sni_container_refs          | Array                                | Lists the IDs of SNI certificates (server certificates with domain names) used by the listener.<br><br>If the parameter value is an empty list, the SNI feature is disabled.                                                                                                                                                                                                                                                                                      |
| tags                        | Array                                | Tags the listener.                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| created_at                  | String                               | Specifies the time when the listener was created. YYYY-MM-DDTHH:MM:SS                                                                                                                                                                                                                                                                                                                                                                                             |
| updated_at                  | String                               | Specifies the time when the listener was updated. YYYY-MM-DDTHH:MM:SS                                                                                                                                                                                                                                                                                                                                                                                             |
| insert_headers              | <a href="#">InsertHeaders</a> object | Specifies whether to insert HTTP extension headers and sent them to backend servers. All headers are synchronized. If this parameter is not set, default values are used.<br><br>Information required by backend servers can be written into HTTP headers and passed to backend servers.<br><br>For example, you can use the <b>X-Forwarded-ELB-IP</b> header to transmit the load balancer EIP to backend servers. For details, see <a href="#">Table 6-47</a> . |

| Parameter          | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls_ciphers_policy | String | Specifies the security policy used by the listener. This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> .<br><br>The value can be <b>tls-1-0-inherit</b> , <b>tls-1-0</b> , <b>tls-1-1</b> , <b>tls-1-2</b> , or <b>tls-1-2-strict</b> , and the default value is <b>tls-1-0</b> . Lists cipher suites used by each security policy. For details, see <a href="#">Table 6-48</a> . |
| protection_status  | String | String<br>Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul>                                                                 |
| protection_reason  | String | String<br>Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .                                                                                                                                                                                                                                                                        |

**Table 6-46** loadbalancers parameter description

| Parameter | Mandatory | Type   | Description                                       |
|-----------|-----------|--------|---------------------------------------------------|
| id        | Yes       | String | Specifies the ID of the associated load balancer. |

**Table 6-47 insert\_headers** parameter description

| Parameter          | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-ELB-IP | No        | Boolean | <p>Specifies whether to transparently transmit the load balancer EIP to backend servers. After this function is enabled, the load balancer EIP is stored in the HTTP header and passes to backend servers.</p> <p>The value can be <b>true</b> or <b>false</b>.<br/><b>true</b>: This function is enabled.<br/><b>false</b>: The function is disabled.<br/>The function is disabled by default.</p> |
| X-Forwarded-Host   | No        | Boolean | <p>Specifies whether to rewrite the <b>X-Forwarded-Host</b> header. If this function is enabled, <b>X-Forwarded-Host</b> is rewritten based on <b>Host</b> in the request and sent to backend servers.</p> <p>The value can be <b>true</b> or <b>false</b>.<br/><b>true</b>: This function is enabled.<br/><b>false</b>: The function is disabled.<br/>The function is enabled by default.</p>      |

**Table 6-48 tls\_ciphers\_policy** parameter description

| Security Policy | TLS Version                | Cipher Suite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-0-inherit | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA:DHE-DSS-AES128-SHA:CAMELLIA128-SHA:EDH-RSA-DES-CBC3-SHA:DES-CBC3-SHA:ECDHE-RSA-RC4-SHA:RC4-SHA:DHE-RSA-AES256-SHA:DHE-DSS-AES256-SHA:DHE-RSA-CAMELLIA256-SHA:DHE-DSS-CAMELLIA256-SHA:CAMELLIA256-SHA:EDH-DSS-DES-CBC3-SHA:DHE-RSA-CAMELLIA128-SHA:DHE-DSS-CAMELLIA128-SHA |

| Security Policy | TLS Version                | Cipher Suite                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-0         | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA |
| tls-1-1         | TLS 1.2 TLS 1.1            |                                                                                                                                                                                                                                                                                                                                                                                                       |
| tls-1-2         | TLS 1.2                    |                                                                                                                                                                                                                                                                                                                                                                                                       |
| tls-1-2-strict  | TLS 1.2                    | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384                                                                                                               |

## Example Request

- Example request 1: Adding a TCP listener

POST https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/listeners

```
{
 "listener": {
 "protocol_port": 80,
 "protocol": "TCP",
 "loadbalancer_id": "0416b6f1-877f-4a51-987e-978b3f084253",
 "name": "listener-test",
 "insert_headers": {},
 "admin_state_up": true
 }
}
```

- Example request 2: Adding a listener with **protocol** set to **TERMINATED\_HTTPS**

POST https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/listeners

```
{
 "listener": {
 "protocol_port": 25,
 "protocol": "TERMINATED_HTTPS",
 "default_tls_container_ref": "02dcd56799e045bf8b131533cc911dd6",
 "loadbalancer_id": "0416b6f1-877f-4a51-987e-978b3f084253",
 "name": "listener-test",
 "admin_state_up": true
 }
}
```

## Example Response

- Example response 1

```
{
 "listener": {
 "protocol_port": 80,
 "protocol": "TCP",
 "description": "",
 "client_ca_tls_container_ref": null,
 "default_tls_container_ref": null,
 "admin_state_up": true,
 "http2_enable": false,
 "loadbalancers": [
 {
 "id": "0416b6f1-877f-4a51-987e-978b3f084253"
 }
],
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "sni_container_refs": [],
 "connection_limit": -1,
 "default_pool_id": null,
 "tags": [],
 "insert_headers": {},
 "id": "b7f32b52-6f17-4b16-9ec8-063d71b653ce",
 "name": "listener-test",
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14"
 }
}
```

- Example response 2

```
{
 "listener": {
 "insert_headers": {},
 "protocol_port": 25,
 "protocol": "TERMINATED_HTTPS",
 "description": "",
 "default_tls_container_ref": "02dcd56799e045bf8b131533cc911dd6",
 "sni_container_refs": [],
 "loadbalancers": [
 {
 "id": "0416b6f1-877f-4a51-987e-978b3f084253"
 }
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "created_at": "2019-01-21T12:38:31",
 "client_ca_tls_container_ref": null,
 "connection_limit": -1,
 "updated_at": "2019-01-21T12:38:31",
 "http2_enable": false,
 "admin_state_up": true,
 "default_pool_id": null,
 "insert_headers": {},
 "id": "b56634cd-5ba8-460e-b5a2-6de5ba8eaf60",
 "tags": [],
 "name": "listener-test"
 }
}
```

- Example response 3

```
{
 "listener": {
 "insert_headers": {},
 "protocol_port": 27,
 "protocol": "TERMINATED_HTTPS",
 "description": "",
 "default_tls_container_ref": "02dcd56799e045bf8b131533cc911dd6",
 "sni_container_refs": [
```

```
 "5882325fd6dd4b95a88d33238d293a0f",
 "e15d1b5000474adca383c3cd9ddc06d4"
],
 "loadbalancers": [
 {
 "id": "6bb85e33-4953-457a-85a9-336d76125b7b"
 }
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "created_at": "2019-01-21T12:43:55",
 "client_ca_tls_container_ref": null,
 "connection_limit": -1,
 "updated_at": "2019-01-21T12:43:55",
 "http2_enable": false,
 "admin_state_up": true,
 "default_pool_id": null,
 "insert_headers": {},
 "id": "b2cfda5b-52fe-4320-8845-34e8d4dac2c7",
 "tags": [],
 "name": "listener-test"
}
```

## Status Code

For details, see [Status Codes](#).

## 6.2.2 Querying Details of a Listener

### Function

This API is used to query details about a listener using its ID.

### URI

GET /v2/{project\_id}/elb/listeners/{listener\_id}

**Table 6-49** Parameter description

| Parameter   | Mandatory | Type   | Description                |
|-------------|-----------|--------|----------------------------|
| project_id  | Yes       | String | Specifies the project ID.  |
| listener_id | Yes       | String | Specifies the listener ID. |

### Request

None

## Response

**Table 6-50** Response parameters

| Parameter | Type                            | Description                                                           |
|-----------|---------------------------------|-----------------------------------------------------------------------|
| listener  | <a href="#">Listener</a> object | Specifies the listener. For details, see <a href="#">Table 6-51</a> . |

**Table 6-51** listener parameter description

| Parameter     | Type                                            | Description                                                                                                                                                                                    |
|---------------|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id            | String                                          | Specifies the listener ID.                                                                                                                                                                     |
| tenant_id     | String                                          | Specifies the ID of the project where the listener is used.<br>The value contains a maximum of 255 characters.                                                                                 |
| project_id    | String                                          | Specifies the ID of the project to which the listener belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                       |
| name          | String                                          | Specifies the listener name.<br>Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details.<br>The value contains a maximum of 255 characters. |
| description   | String                                          | Provides supplementary information about the listener.<br>The value contains a maximum of 255 characters.                                                                                      |
| protocol      | String                                          | Specifies the protocol used by the listener.<br>The value can be <b>TCP</b> , <b>HTTP</b> , <b>UDP</b> , or <b>TERMINATED_HTTPS</b> .                                                          |
| protocol_port | Integer                                         | Specifies the port used by the listener.<br>The port number ranges from 1 to 65535.                                                                                                            |
| loadbalancers | Array of <a href="#">Loadbalance</a> rs objects | Specifies the ID of the associated load balancer. For details, see <a href="#">Table 6-46</a> .                                                                                                |

| Parameter                   | Type    | Description                                                                                                                                                                                                                                                                                                                               |
|-----------------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| connection_limit            | Integer | <p>Specifies the maximum number of connections.</p> <p>The value ranges from <b>-1</b> to <b>2147483647</b>. The default value is <b>-1</b>, indicating that there is no restriction on the maximum number of connections.</p> <p>This parameter is reserved.</p>                                                                         |
| admin_state_up              | Boolean | <p>Specifies the administrative status of the listener.</p> <p>This parameter is reserved. The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                      |
| http2_enable                | Boolean | <p>Specifies whether to use HTTP/2.</p> <p>The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: HTTP/2 is used.</li><li>• <b>false</b>: HTTP/2 is not used.</li></ul> <p>This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b>.</p> |
| default_pool_id             | String  | <p>Specifies the ID of the associated backend server group.</p> <p>If a request does not match the forwarding policy, the request is forwarded to the default backend server group for processing. If the value is <b>null</b>, the listener has no default backend server group.</p>                                                     |
| default_tls_container_ref   | String  | <p>Specifies the ID of the server certificate used by the listener. For details, see <a href="#">Certificate</a>.</p> <p>This parameter is mandatory when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b>.</p> <p>The value contains a maximum of 128 characters.</p>                                                                   |
| client_ca_tls_container_ref | String  | <p>Specifies the ID of the CA certificate used by the listener.</p> <p>The value contains a maximum of 128 characters.</p> <p>For details, see <a href="#">Certificate</a>.</p>                                                                                                                                                           |



| Parameter          | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------------|--------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| sni_container_refs | Array                                | Lists the IDs of SNI certificates (server certificates with domain names) used by the listener.<br><br>If the parameter value is an empty list, the SNI feature is disabled.                                                                                                                                                                                                                                                                                      |
| tags               | Array                                | Tags the listener.                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| created_at         | String                               | Specifies the time when the listener was created. YYYY-MM-DDTHH:MM:SS                                                                                                                                                                                                                                                                                                                                                                                             |
| updated_at         | String                               | Specifies the time when the listener was updated. YYYY-MM-DDTHH:MM:SS                                                                                                                                                                                                                                                                                                                                                                                             |
| insert_headers     | <a href="#">InsertHeaders</a> object | Specifies whether to insert HTTP extension headers and sent them to backend servers. All headers are synchronized. If this parameter is not set, default values are used.<br><br>Information required by backend servers can be written into HTTP headers and passed to backend servers.<br><br>For example, you can use the <b>X-Forwarded-ELB-IP</b> header to transmit the load balancer EIP to backend servers. For details, see <a href="#">Table 6-47</a> . |
| tls_ciphers_policy | String                               | Specifies the security policy used by the listener. This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> .<br><br>The value can be <b>tls-1-0-inherit</b> , <b>tls-1-0</b> , <b>tls-1-1</b> , <b>tls-1-2</b> , or <b>tls-1-2-strict</b> , and the default value is <b>tls-1-0</b> . Lists cipher suites used by each security policy. For details, see <a href="#">Table 6-48</a> .                          |
| protection_status  | String                               | String<br><br>Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"><li>● <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>● <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul>                                                                                      |
| protection_reason  | String                               | String<br><br>Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .                                                                                                                                                                                                                                                                                             |

**Table 6-52 loadbalancers** parameter description

| Parameter | Mandatory | Type   | Description                                       |
|-----------|-----------|--------|---------------------------------------------------|
| id        | Yes       | String | Specifies the ID of the associated load balancer. |

**Table 6-53 insert\_headers** parameter description

| Parameter          | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                         |
|--------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-ELB-IP | No        | Boolean | <p>Specifies whether to transparently transmit the load balancer EIP to backend servers. After this function is enabled, the load balancer EIP is stored in the HTTP header and passes to backend servers.</p> <p>The value can be <b>true</b> or <b>false</b>.<br/><b>true</b>: This function is enabled.<br/><b>false</b>: The function is disabled.<br/>The function is disabled by default.</p> |
| X-Forwarded-Host   | No        | Boolean | <p>Specifies whether to rewrite the <b>X-Forwarded-Host</b> header. If this function is enabled, <b>X-Forwarded-Host</b> is rewritten based on <b>Host</b> in the request and sent to backend servers.</p> <p>The value can be <b>true</b> or <b>false</b>.<br/><b>true</b>: This function is enabled.<br/><b>false</b>: The function is disabled.<br/>The function is enabled by default.</p>      |

**Table 6-54** `tls_ciphers_policy` parameter description

| Security Policy | TLS Version                | Cipher Suite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-0-inherit | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA:DHE-DSS-AES128-SHA:CAMELLIA128-SHA:EDH-RSA-DES-CBC3-SHA:DES-CBC3-SHA:ECDHE-RSA-RC4-SHA:RC4-SHA:DHE-RSA-AES256-SHA:DHE-DSS-AES256-SHA:DHE-RSA-CAMELLIA256-SHA:DHE-DSS-CAMELLIA256-SHA:EDH-DSS-DES-CBC3-SHA:DHE-RSA-CAMELLIA128-SHA:DHE-DSS-CAMELLIA128-SHA |
| tls-1-0         | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA                                                                                                                                                                                                                                                                              |
| tls-1-1         | TLS 1.2 TLS 1.1            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tls-1-2         | TLS 1.2                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tls-1-2-strict  | TLS 1.2                    | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA                                                                                                                                                                                                                                                                              |

## Example Request

- Example request

```
GET https://{Endpoint}/v2/1867112d054b427e808cc6096d8193a1/elb/listeners/09e64049-2ab0-4763-a8c5-f4207875dc3e
```

### Example Response

- Example response

```
{ "listener": { "protocol_port": 8000, "protocol": "TCP", "description": "", "client_ca_tls_container_ref": null, "default_tls_container_ref": null, "admin_state_up": true, "http2_enable": false, "loadbalancers": [{ "id": "3d77894d-2ffe-4411-ac0a-0d57689779b8" }], "tenant_id": "1867112d054b427e808cc6096d8193a1", "project_id": "1867112d054b427e808cc6096d8193a1", "sni_container_refs": [], "connection_limit": -1, "default_pool_id": "b7e53dbd-62ab-4505-a280-5c066078a5c9", "id": "09e64049-2ab0-4763-a8c5-f4207875dc3e", "tags": [], "name": "listener-2", "insert_headers": { "X-Forwarded-ELB-IP": true, "X-Forwarded-Host": true }, "created_at": "2018-07-25T01:54:13", "updated_at": "2018-07-25T01:54:14" }}
```

### Status Code

For details, see [Status Codes](#).

## 6.2.3 Querying Listeners

### Function

This API is used to query the listeners and display them in a list. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

You can query listeners using information such as listener ID, protocol used by the listener, port used by the listener, or backend server private IP address.

### URI

GET /v2/{project\_id}/elb/listeners

Table 6-55 Path parameters

| Parameter  | Mandatory | Type   | Description               |
|------------|-----------|--------|---------------------------|
| project_id | Yes       | String | Specifies the project ID. |

**Table 6-56** Query parameters

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker           | No        | String  | Specifies the ID of the listener from which pagination query starts, that is, the ID of the last listener on the previous page.<br>This parameter must be used together with <b>limit</b> .                                                                                                                                                                                                                                   |
| limit            | No        | Integer | Specifies the number of listeners on each page. If this parameter is not set, all listeners are queried by default.                                                                                                                                                                                                                                                                                                           |
| page_reverse     | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br>This parameter must be used together with <b>limit</b> . |
| id               | No        | String  | Specifies the listener ID.                                                                                                                                                                                                                                                                                                                                                                                                    |
| name             | No        | String  | Specifies the listener name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                               |
| description      | No        | String  | Provides supplementary information about the listener.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                     |
| loadbalancer_id  | No        | String  | Specifies the ID of the associated load balancer.                                                                                                                                                                                                                                                                                                                                                                             |
| connection_limit | No        | Integer | Specifies the maximum number of connections.                                                                                                                                                                                                                                                                                                                                                                                  |
| admin_state_up   | No        | Boolean | Specifies the administrative status of the listener.<br>This parameter is reserved, and the default value is <b>true</b> .                                                                                                                                                                                                                                                                                                    |

| Parameter                   | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| default_pool_id             | No        | String  | Specifies the ID of the associated backend server group.<br><br>If a request does not match the forwarding policy, the request is forwarded to the default backend server group for processing.                                                                                                                                                                                                                                                                                                         |
| http2_enable                | No        | Boolean | Specifies whether to use HTTP/2.<br><br>The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: HTTP/2 is used.</li><li>• <b>false</b>: HTTP/2 is not used.</li></ul>                                                                                                                                                                                                                                                                                       |
| default_tls_container_ref   | No        | String  | Specifies the ID of the server certificate used by the listener.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| client_ca_tls_container_ref | No        | String  | Specifies the ID of the CA certificate used by the listener.                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| protocol                    | No        | String  | Specifies the protocol used by the listener.<br><br>The value can be <b>TCP</b> , <b>HTTP</b> , <b>UDP</b> , or <b>TERMINATED_HTTPS</b> .                                                                                                                                                                                                                                                                                                                                                               |
| protocol_port               | No        | Integer | Specifies the port used by the listener.                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| enterprise_project_id       | No        | String  | Specifies the enterprise project ID. Enterprise projects are used for fine-grained authentication. <ul style="list-style-type: none"><li>• If <b>default_pool_id</b> is passed, the ID of the enterprise project to which the backend server group belongs is used for authentication.</li><li>• If neither <b>default_pool_id</b> nor <b>enterprise_project_id</b> is passed, fine-grained authentication is performed. The <b>elb:*list</b> permissions must be assigned to the user group.</li></ul> |

| Parameter          | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls_ciphers_policy | No        | String | <p>Specifies the security policy used by the listener. This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b>.</p> <p>The value can be <b>tls-1-0-inherit</b>, <b>tls-1-0</b>, <b>tls-1-1</b>, <b>tls-1-2</b>, or <b>tls-1-2-strict</b>, and the default value is <b>tls-1-0</b>. For details of cipher suites for each security policy, see <a href="#">Table 6-57</a>.</p> |

**Table 6-57** tls\_ciphers\_policy parameter description

| Security Policy | TLS Version                | Cipher Suite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-0-inherit | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA:DHE-DSS-AES128-SHA:CAMELLIA128-SHA:EDH-RSA-DES-CBC3-SHA:DES-CBC3-SHA:ECDHE-RSA-RC4-SHA:RC4-SHA:DHE-RSA-AES256-SHA:DHE-DSS-AES256-SHA:DHE-RSA-CAMELLIA256-SHA:DHE-DSS-CAMELLIA256-SHA:CAMELLIA256-SHA:EDH-DSS-DES-CBC3-SHA:DHE-RSA-CAMELLIA128-SHA:DHE-DSS-CAMELLIA128-SHA |
| tls-1-0         | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA                                                                                                                                                                                                                                                                                              |
| tls-1-1         | TLS 1.2 TLS 1.1            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tls-1-2         | TLS 1.2                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Security Policy | TLS Version | Cipher Suite                                                                                                                                                                                                                                                                            |
|-----------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-2-strict  | TLS 1.2     | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384 |

Request

None

Response

Table 6-58 Response parameters

| Parameter | Type                                       | Description                                                        |
|-----------|--------------------------------------------|--------------------------------------------------------------------|
| listeners | Array of <a href="#">Listeners</a> objects | Lists the listeners. For details, see <a href="#">Table 6-59</a> . |

Table 6-59 listener parameter description

| Parameter  | Type   | Description                                                                                                                                                                                    |
|------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id         | String | Specifies the listener ID.                                                                                                                                                                     |
| tenant_id  | String | Specifies the ID of the project where the listener is used.<br>The value contains a maximum of 255 characters.                                                                                 |
| project_id | String | Specifies the ID of the project to which the listener belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                       |
| name       | String | Specifies the listener name.<br>Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details.<br>The value contains a maximum of 255 characters. |



| Parameter        | Type                                  | Description                                                                                                                                                                                                                                                                                                               |
|------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description      | String                                | Provides supplementary information about the listener.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                 |
| protocol         | String                                | Specifies the protocol used by the listener.<br>The value can be <b>TCP</b> , <b>HTTP</b> , <b>UDP</b> , or <b>TERMINATED_HTTPS</b> .                                                                                                                                                                                     |
| protocol_port    | Integer                               | Specifies the port used by the listener.<br>The port number ranges from 1 to 65535.                                                                                                                                                                                                                                       |
| loadbalancers    | Array of <b>Loadbalancers</b> objects | Specifies the ID of the associated load balancer. For details, see <a href="#">Table 6-46</a> .                                                                                                                                                                                                                           |
| connection_limit | Integer                               | Specifies the maximum number of connections.<br>The value ranges from <b>-1</b> to <b>2147483647</b> . The default value is <b>-1</b> , indicating that there is no restriction on the maximum number of connections.<br>This parameter is reserved.                                                                      |
| admin_state_up   | Boolean                               | Specifies the administrative status of the listener.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>● <b>true</b>: Enabled</li><li>● <b>false</b>: Disabled</li></ul>                                                                                |
| http2_enable     | Boolean                               | Specifies whether to use HTTP/2.<br>The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>● <b>true</b>: HTTP/2 is used.</li><li>● <b>false</b>: HTTP/2 is not used.</li></ul> This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> . |
| default_pool_id  | String                                | Specifies the ID of the associated backend server group.<br>If a request does not match the forwarding policy, the request is forwarded to the default backend server group for processing. If the value is <b>null</b> , the listener has no default backend server group.                                               |

| Parameter                   | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| default_tls_container_ref   | String                               | Specifies the ID of the server certificate used by the listener. For details, see <a href="#">Certificate</a> .<br>This parameter is mandatory when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b> .<br>The value contains a maximum of 128 characters.                                                                                                                                                                                                |
| client_ca_tls_container_ref | String                               | Specifies the ID of the CA certificate used by the listener.<br>The value contains a maximum of 128 characters.<br>For details, see <a href="#">Certificate</a> .                                                                                                                                                                                                                                                                                         |
| sni_container_refs          | Array                                | Lists the IDs of SNI certificates (server certificates with domain names) used by the listener.<br>If the parameter value is an empty list, the SNI feature is disabled.                                                                                                                                                                                                                                                                                  |
| tags                        | Array                                | Tags the listener.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| created_at                  | String                               | Specifies the time when the listener was created. YYYY-MM-DDTHH:MM:SS                                                                                                                                                                                                                                                                                                                                                                                     |
| updated_at                  | String                               | Specifies the time when the listener was updated. YYYY-MM-DDTHH:MM:SS                                                                                                                                                                                                                                                                                                                                                                                     |
| insert_headers              | <a href="#">InsertHeaders</a> object | Specifies whether to insert HTTP extension headers and sent them to backend servers. All headers are synchronized. If this parameter is not set, default values are used.<br>Information required by backend servers can be written into HTTP headers and passed to backend servers.<br>For example, you can use the <b>X-Forwarded-ELB-IP</b> header to transmit the load balancer EIP to backend servers. For details, see <a href="#">Table 6-47</a> . |
| tls_ciphers_policy          | String                               | Specifies the security policy used by the listener. This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> .<br>The value can be <b>tls-1-0-inherit</b> , <b>tls-1-0</b> , <b>tls-1-1</b> , <b>tls-1-2</b> , or <b>tls-1-2-strict</b> , and the default value is <b>tls-1-0</b> . Lists cipher suites used by each security policy. For details, see <a href="#">Table 6-48</a> .                      |

| Parameter         | Type   | Description                                                                                                                                                                                                                                                                                                                                                              |
|-------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_status | String | String<br>Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> |
| protection_reason | String | String<br>Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .                                                                                                                                                                                                        |

Table 6-60 loadbalancers parameter description

| Parameter | Mandatory | Type   | Description                                       |
|-----------|-----------|--------|---------------------------------------------------|
| id        | Yes       | String | Specifies the ID of the associated load balancer. |

Table 6-61 insert\_headers parameter description

| Parameter          | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-ELB-IP | No        | Boolean | Specifies whether to transparently transmit the load balancer EIP to backend servers. After this function is enabled, the load balancer EIP is stored in the HTTP header and passes to backend servers.<br>The value can be <b>true</b> or <b>false</b> .<br><b>true</b> : This function is enabled.<br><b>false</b> : The function is disabled.<br>The function is disabled by default. |

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Host | No        | Boolean | <p>Specifies whether to rewrite the <b>X-Forwarded-Host</b> header. If this function is enabled, <b>X-Forwarded-Host</b> is rewritten based on <b>Host</b> in the request and sent to backend servers.</p> <p>The value can be <b>true</b> or <b>false</b>.<br/><b>true</b>: This function is enabled.<br/><b>false</b>: The function is disabled.</p> <p>The function is enabled by default.</p> |

Table 6-62 `tls_ciphers_policy` parameter description

| Security Policy | TLS Version                | Cipher Suite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-0-inherit | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA:DHE-DSS-AES128-SHA:CAMELLIA128-SHA:EDH-RSA-DES-CBC3-SHA:DES-CBC3-SHA:ECDHE-RSA-RC4-SHA:RC4-SHA:DHE-RSA-AES256-SHA:DHE-DSS-AES256-SHA:DHE-RSA-CAMELLIA256-SHA:DHE-DSS-CAMELLIA256-SHA:CAMELLIA256-SHA:EDH-DSS-DES-CBC3-SHA:DHE-RSA-CAMELLIA128-SHA:DHE-DSS-CAMELLIA128-SHA |
| tls-1-0         | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA                                                                                                                                                                                                                                                                                              |
| tls-1-1         | TLS 1.2 TLS 1.1            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tls-1-2         | TLS 1.2                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Security Policy | TLS Version | Cipher Suite                                                                                                                                                                                                                                                                            |
|-----------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-2-strict  | TLS 1.2     | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384 |

## Example Request

- Example request 1: Querying all listeners  
GET https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/listeners
- Request example 2: Querying UDP listeners  
GET https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/listeners?protocol=UDP

## Example Response

- Example response 1

```
{
 "listeners": [
 {
 "client_ca_tls_container_ref": null,
 "protocol": "TCP",
 "description": "",
 "default_tls_container_ref": null,
 "admin_state_up": true,
 "http2_enable": false,
 "loadbalancers": [
 {
 "id": "bc7ba445-035a-4464-a1a3-a62cf4a14116"
 }
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "sni_container_refs": [],

 "connection_limit": -1,
 "protocol_port": 80,
 "default_pool_id": "ed75f16e-fcc6-403e-a3fb-4eae82005eab",
 "id": "75045172-70e9-480d-9443-b8b6459948f7",
 "tags": [],
 "name": "listener-cb2n",
 "insert_headers": {
 "X-Forwarded-ELB-IP": true,
 "X-Forwarded-Host": true
 },
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14"
 },
 {
 "client_ca_tls_container_ref": null,
 "protocol": "TCP",
 "description": "",
 "default_tls_container_ref": null,
 "admin_state_up": true,
 "http2_enable": false,
 "loadbalancers": [
 {
```

```
 "id": "165b6a38-5278-4569-b747-b2ee65ea84a4"
 },
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "sni_container_refs": [],

 "connection_limit": -1,
 "protocol_port": 8080,
 "default_pool_id": null,
 "id": "dada0003-7b0e-4de8-a4e1-1e937be2ba14",
 "tags": [],
 "name": "lsnr_name_mod",
 "insert_headers": {
 "X-Forwarded-ELB-IP": true,
 "X-Forwarded-Host": true
 },
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14"
 }
]
}
```

- Example response 2

```
{
 "listeners": [
 {
 "insert_headers": null,
 "protocol_port": 64809,
 "protocol": "UDP",
 "description": "",
 "default_tls_container_ref": null,
 "sni_container_refs": [],
 "loadbalancers": [
 {
 "id": "c1127125-64a9-4394-a08a-ef3be8f7ef9c"
 }
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "created_at": "2018-11-29T13:56:21",
 "client_ca_tls_container_ref": null,
 "connection_limit": -1,
 "updated_at": "2018-11-29T13:56:22",
 "http2_enable": false,
 "insert_headers": {
 "X-Forwarded-ELB-IP": true,
 "X-Forwarded-Host": true
 },
 "admin_state_up": true,
 "default_pool_id": "2f6895be-019b-4c82-9b53-c4a2ac009e20",
 "id": "5c63d176-444f-4c75-9cfe-bcb8a05a845c",
 "tags": [],
 "name": "listener-tvp8"
 }
]
}
```

## Status Code

For details, see [Status Codes](#).

## 6.2.4 Updating a Listener

### Function

This API is used to update a listener, such as listener name, description, associated backend server groups, and server certificates.

### Constraints

- If the provisioning status of the associated load balancer is not **ACTIVE**, the listener cannot be updated.
- Only users with the ELB administrator permissions can specify the value of **connection\_limit**.
- The **default\_pool\_id** parameter has the following constraints:
  - Its value cannot be the ID of any backend server group of other listeners.
  - Its value cannot be the ID of any backend server group associated with the forwarding policies set for other listeners.
- The relationships between the protocol used by the listener and the protocol of the backend server group are as follows:
  - When the protocol used by the listener is **TCP**, the protocol of the backend server group must be **TCP**.
  - When the protocol used by the listener is **UDP**, the backend server group protocol must be **UDP**.
  - When the protocol used by the listener is **HTTP** or **TERMINATED\_HTTPS**, the protocol of the backend server group must be **HTTP**.

### URI

PUT /v2/{project\_id}/elb/listeners/{listener\_id}

**Table 6-63** Parameter description

| Parameter   | Mandatory | Type   | Description                |
|-------------|-----------|--------|----------------------------|
| project_id  | Yes       | String | Specifies the project ID.  |
| listener_id | Yes       | String | Specifies the listener ID. |

### Request

**Table 6-64** Parameter description

| Parameter | Mandatory | Type                            | Description                                                           |
|-----------|-----------|---------------------------------|-----------------------------------------------------------------------|
| listener  | Yes       | <a href="#">Listener object</a> | Specifies the listener. For details, see <a href="#">Table 6-65</a> . |

**Table 6-65 listener parameter description**

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                               |
|------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name             | No        | String  | Specifies the listener name.<br>Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details.<br>The value contains a maximum of 255 characters.                                                                                                                            |
| description      | No        | String  | Provides supplementary information about the listener.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                 |
| connection_limit | No        | Integer | Specifies the maximum number of connections.<br>The value ranges from <b>-1</b> to <b>2147483647</b> .<br>This field is reserved. Do not use it. Only users with the ELB administrator permissions can specify this field.                                                                                                |
| http2_enable     | No        | Boolean | Specifies whether to use HTTP/2.<br>The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: HTTP/2 is used.</li><li>• <b>false</b>: HTTP/2 is not used.</li></ul> This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> . |



| Parameter       | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| default_pool_id | No        | String  | <p>Specifies the ID of the associated backend server group.</p> <p>If a request does not match the forwarding policy, the request is forwarded to the default backend server group for processing. If the value is <b>null</b>, the listener has no default backend server group.</p> <p>The <b>default_pool_id</b> parameter has the following constraints:</p> <ul style="list-style-type: none"><li>• Its value cannot be the ID of any backend server group of other listeners.</li><li>• Its value cannot be the ID of any backend server group associated with the forwarding policies set for other listeners.</li></ul> <p>The relationships between the protocol of the backend server group and the protocol used by the listener are as follows:</p> <ul style="list-style-type: none"><li>• When the protocol used by the listener is <b>TCP</b>, the protocol of the backend server group must be <b>TCP</b>.</li><li>• When the protocol used by the listener is <b>UDP</b>, the protocol of the backend server group must be <b>UDP</b>.</li><li>• When the protocol used by the listener is <b>HTTP</b> or <b>TERMINATED_HTTPS</b>, the protocol of the backend server group must be <b>HTTP</b>.</li></ul> |
| admin_state_up  | No        | Boolean | <p>Specifies the administrative status of the listener.</p> <p>This parameter is reserved, and the default value is <b>true</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Parameter                   | Mandatory | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-----------------------------|-----------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| default_tls_container_ref   | No        | String                               | <p>Specifies the ID of the server certificate used by the listener.</p> <p>The value contains a maximum of 128 characters.</p> <p>This parameter is mandatory when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                   |
| client_ca_tls_container_ref | No        | String                               | <p>Specifies the ID of the CA certificate used by the listener.</p> <p>The value contains a maximum of 128 characters.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| sni_container_refs          | No        | Array                                | <p>Lists the IDs of SNI certificates (server certificates with domain names) used by the listener.</p> <p>If the parameter value is an empty list, the SNI feature is disabled.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| insert_headers              | No        | <a href="#">InsertHeaders</a> object | <p>Specifies whether to insert HTTP extension headers and sent them to backend servers. All headers are synchronized. If this parameter is not set, default values are used.</p> <p>Information required by backend servers can be written into HTTP headers and passed to backend servers.</p> <p>For example, you can use the <b>X-Forwarded-ELB-IP</b> header to transmit the load balancer EIP to backend servers. For details, see <a href="#">Table 6-66</a>.</p> <p><b>NOTE</b></p> <p>This parameter takes effect only when the protocol used by the listener is set to <b>HTTP</b> or <b>TERMINATED_HTTPS</b>.</p> |

| Parameter          | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                     |
|--------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls_ciphers_policy | No        | String | <p>Specifies the security policy used by the listener. This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b>.</p> <p>The value can be <b>tls-1-0-inherit</b>, <b>tls-1-0</b>, <b>tls-1-1</b>, <b>tls-1-2</b>, or <b>tls-1-2-strict</b>, and the default value is <b>tls-1-0</b>. For details of cipher suites for each security policy, see <a href="#">Table 6-67</a>.</p> |
| protection_status  | No        | String | <p>Specifies whether modification protection is enabled. The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul>                                                           |
| protection_reason  | No        | String | <p>Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b>.</p>                                                                                                                                                                                                                                                                   |

**Table 6-66** insert\_headers parameter description

| Parameter          | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                            |
|--------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-ELB-IP | No        | Boolean | <p>Specifies whether to transparently transmit the load balancer EIP to backend servers. After this function is enabled, the load balancer EIP is stored in the HTTP header and passes to backend servers.</p> <p>The value can be <b>true</b> or <b>false</b>.<br/><b>true</b>: This function is enabled.<br/><b>false</b>: The function is disabled.</p> <p>The function is disabled by default.</p> |

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Host | No        | Boolean | <p>Specifies whether to rewrite the <b>X-Forwarded-Host</b> header. If this function is enabled, <b>X-Forwarded-Host</b> is rewritten based on <b>Host</b> in the request and sent to backend servers.</p> <p>The value can be <b>true</b> or <b>false</b>.<br/><b>true</b>: This function is enabled.<br/><b>false</b>: The function is disabled.</p> <p>The function is enabled by default.</p> |

Table 6-67 `tls_ciphers_policy` parameter description

| Security Policy | TLS Version                | Cipher Suite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-0-inherit | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA:DHE-DSS-AES128-SHA:CAMELLIA128-SHA:EDH-RSA-DES-CBC3-SHA:DES-CBC3-SHA:ECDHE-RSA-RC4-SHA:RC4-SHA:DHE-RSA-AES256-SHA:DHE-DSS-AES256-SHA:DHE-RSA-CAMELLIA256-SHA:DHE-DSS-CAMELLIA256-SHA:CAMELLIA256-SHA:EDH-DSS-DES-CBC3-SHA:DHE-RSA-CAMELLIA128-SHA:DHE-DSS-CAMELLIA128-SHA |
| tls-1-0         | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA                                                                                                                                                                                                                                                                                              |
| tls-1-1         | TLS 1.2 TLS 1.1            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tls-1-2         | TLS 1.2                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Security Policy | TLS Version | Cipher Suite                                                                                                                                                                                                                                                                            |
|-----------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-2-strict  | TLS 1.2     | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384 |

## Response

**Table 6-68** Response parameters

| Parameter | Type                            | Description                                                           |
|-----------|---------------------------------|-----------------------------------------------------------------------|
| listener  | <a href="#">Listener</a> object | Specifies the listener. For details, see <a href="#">Table 6-69</a> . |

**Table 6-69** listener parameter description

| Parameter   | Type   | Description                                                                                                                                                                                    |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id          | String | Specifies the listener ID.                                                                                                                                                                     |
| tenant_id   | String | Specifies the ID of the project where the listener is used.<br>The value contains a maximum of 255 characters.                                                                                 |
| project_id  | String | Specifies the ID of the project to which the listener belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                       |
| name        | String | Specifies the listener name.<br>Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details.<br>The value contains a maximum of 255 characters. |
| description | String | Provides supplementary information about the listener.<br>The value contains a maximum of 255 characters.                                                                                      |

| Parameter                 | Type                                  | Description                                                                                                                                                                                                                                                                                                               |
|---------------------------|---------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol                  | String                                | Specifies the protocol used by the listener.<br>The value can be <b>TCP</b> , <b>HTTP</b> , <b>UDP</b> , or <b>TERMINATED_HTTPS</b> .                                                                                                                                                                                     |
| protocol_port             | Integer                               | Specifies the port used by the listener.<br>The port number ranges from 1 to 65535.                                                                                                                                                                                                                                       |
| loadbalancers             | Array of <b>Loadbalancers</b> objects | Specifies the ID of the associated load balancer. For details, see <a href="#">Table 6-46</a> .                                                                                                                                                                                                                           |
| connection_limit          | Integer                               | Specifies the maximum number of connections.<br>The value ranges from <b>-1</b> to <b>2147483647</b> . The default value is <b>-1</b> , indicating that there is no restriction on the maximum number of connections.<br>This parameter is reserved.                                                                      |
| admin_state_up            | Boolean                               | Specifies the administrative status of the listener.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                |
| http2_enable              | Boolean                               | Specifies whether to use HTTP/2.<br>The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: HTTP/2 is used.</li><li>• <b>false</b>: HTTP/2 is not used.</li></ul> This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> . |
| default_pool_id           | String                                | Specifies the ID of the associated backend server group.<br>If a request does not match the forwarding policy, the request is forwarded to the default backend server group for processing. If the value is <b>null</b> , the listener has no default backend server group.                                               |
| default_tls_container_ref | String                                | Specifies the ID of the server certificate used by the listener. For details, see <a href="#">Certificate</a> .<br>This parameter is mandatory when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b> .<br>The value contains a maximum of 128 characters.                                                                |

| Parameter                   | Type                                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| client_ca_tls_container_ref | String                               | Specifies the ID of the CA certificate used by the listener.<br>The value contains a maximum of 128 characters.<br>For details, see <a href="#">Certificate</a> .                                                                                                                                                                                                                                                                                         |
| sni_container_refs          | Array                                | Lists the IDs of SNI certificates (server certificates with domain names) used by the listener.<br>If the parameter value is an empty list, the SNI feature is disabled.                                                                                                                                                                                                                                                                                  |
| tags                        | Array                                | Tags the listener.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| created_at                  | String                               | Specifies the time when the listener was created. YYYY-MM-DDTHH:MM:SS                                                                                                                                                                                                                                                                                                                                                                                     |
| updated_at                  | String                               | Specifies the time when the listener was updated. YYYY-MM-DDTHH:MM:SS                                                                                                                                                                                                                                                                                                                                                                                     |
| insert_headers              | <a href="#">InsertHeaders</a> object | Specifies whether to insert HTTP extension headers and sent them to backend servers. All headers are synchronized. If this parameter is not set, default values are used.<br>Information required by backend servers can be written into HTTP headers and passed to backend servers.<br>For example, you can use the <b>X-Forwarded-ELB-IP</b> header to transmit the load balancer EIP to backend servers. For details, see <a href="#">Table 6-47</a> . |
| tls_ciphers_policy          | String                               | Specifies the security policy used by the listener. This parameter takes effect only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> .<br>The value can be <b>tls-1-0-inherit</b> , <b>tls-1-0</b> , <b>tls-1-1</b> , <b>tls-1-2</b> , or <b>tls-1-2-strict</b> , and the default value is <b>tls-1-0</b> . Lists cipher suites used by each security policy. For details, see <a href="#">Table 6-48</a> .                      |

| Parameter         | Type   | Description                                                                                                                                                                                                                                                                                                                                                              |
|-------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_status | String | String<br>Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> |
| protection_reason | String | String<br>Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .                                                                                                                                                                                                        |

Table 6-70 loadbalancers parameter description

| Parameter | Mandatory | Type   | Description                                       |
|-----------|-----------|--------|---------------------------------------------------|
| id        | Yes       | String | Specifies the ID of the associated load balancer. |

Table 6-71 insert\_headers parameter description

| Parameter          | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                              |
|--------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-ELB-IP | No        | Boolean | Specifies whether to transparently transmit the load balancer EIP to backend servers. After this function is enabled, the load balancer EIP is stored in the HTTP header and passes to backend servers.<br>The value can be <b>true</b> or <b>false</b> .<br><b>true</b> : This function is enabled.<br><b>false</b> : The function is disabled.<br>The function is disabled by default. |



| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| X-Forwarded-Host | No        | Boolean | <p>Specifies whether to rewrite the <b>X-Forwarded-Host</b> header. If this function is enabled, <b>X-Forwarded-Host</b> is rewritten based on <b>Host</b> in the request and sent to backend servers.</p> <p>The value can be <b>true</b> or <b>false</b>.<br/><b>true</b>: This function is enabled.<br/><b>false</b>: The function is disabled.</p> <p>The function is enabled by default.</p> |

Table 6-72 `tls_ciphers_policy` parameter description

| Security Policy | TLS Version                | Cipher Suite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-0-inherit | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA:DHE-DSS-AES128-SHA:CAMELLIA128-SHA:EDH-RSA-DES-CBC3-SHA:DES-CBC3-SHA:ECDHE-RSA-RC4-SHA:RC4-SHA:DHE-RSA-AES256-SHA:DHE-DSS-AES256-SHA:DHE-RSA-CAMELLIA256-SHA:DHE-DSS-CAMELLIA256-SHA:CAMELLIA256-SHA:EDH-DSS-DES-CBC3-SHA:DHE-RSA-CAMELLIA128-SHA:DHE-DSS-CAMELLIA128-SHA |
| tls-1-0         | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA                                                                                                                                                                                                                                                                                              |
| tls-1-1         | TLS 1.2 TLS 1.1            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tls-1-2         | TLS 1.2                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

| Security Policy | TLS Version | Cipher Suite                                                                                                                                                                                                                                                                            |
|-----------------|-------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-2-strict  | TLS 1.2     | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384 |

## Example Request

- Example request: Updating a listener  
PUT https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/listeners/f622c150-72f5-4263-a47a-e5003c652aa3  
{  
 "listener": {  
 "description": "my listener",  
 "name": "listener-jy-test2",  
 "default\_tls\_container\_ref": "23b58a961a4d4c95be585e98046e657a",  
 "client\_ca\_tls\_container\_ref": "417a0976969f497db8cbb083bff343ba",  
 "default\_pool\_id": "c61310de-9a06-4f0c-850c-6f4797b9984c"  
 }  
}

## Example Response

- Example response  
{  
 "listener": {  
 "client\_ca\_tls\_container\_ref": "417a0976969f497db8cbb083bff343ba",  
 "protocol": "TERMINATED\_HTTPS",  
 "description": "my listener",  
 "default\_tls\_container\_ref": "23b58a961a4d4c95be585e98046e657a",  
 "admin\_state\_up": true,  
 "http2\_enable": false,  
 "loadbalancers": [  
 {  
 "id": "165b6a38-5278-4569-b747-b2ee65ea84a4"  
 }  
 ],  
 "tenant\_id": "601240b9c5c94059b63d484c92cfe308",  
 "project\_id": "601240b9c5c94059b63d484c92cfe308",  
 "sni\_container\_refs": [],  
 "connection\_limit": -1,  
 "protocol\_port": 443,  
 "tags": [],  
 "default\_pool\_id": "c61310de-9a06-4f0c-850c-6f4797b9984c",  
 "id": "f622c150-72f5-4263-a47a-e5003c652aa3",  
 "name": "listener-jy-test2",  
 "insert\_headers": {  
 "X-Forwarded-ELB-IP": true,  
 "X-Forwarded-Host": true  
 },  
 "created\_at": "2018-07-25T01:54:13",  
 "updated\_at": "2018-07-25T01:54:14"  
 }  
}

## Status Code

For details, see [Status Codes](#).

## 6.2.5 Deleting a Listener

### Function

This API is used to delete a listener by ID.

### Constraints

If the **cascade** value is **false**, delete the associated backend server groups by referring to [Deleting a Backend Server Group](#), or change the value of **default\_pool\_id** to **null** by referring to [Updating a Listener](#) and delete associated forwarding policies by referring to [Deleting a Forwarding Policy](#), before attempting to delete the listener.

### URI

DELETE /v2/{project\_id}/elb/listeners/{listener\_id}

**Table 6-73** Parameter description

| Parameter   | Mandator<br>y | Type        | Description                                                                                                                                 |
|-------------|---------------|-------------|---------------------------------------------------------------------------------------------------------------------------------------------|
| project_id  | Yes           | Strin<br>g  | Specifies the project ID.                                                                                                                   |
| listener_id | Yes           | Strin<br>g  | Specifies the listener ID.                                                                                                                  |
| cascade     | No            | Bool<br>ean | Specifies whether to delete the resources associated with the listener when it is deleted, including forwarding policy and backend servers. |

### Request

None

### Response

None

### Example Request

- Example request: Deleting a listener  
DELETE https://{Endpoint}/v2/{project\_id}/elb/listeners/35cb8516-1173-4035-8dae-0dae3453f37f

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

# 6.3 Backend Server Group

## 6.3.1 Adding a Backend Server Group

### Function

This API is used to add a backend server group. After multiple backend servers are added to a backend server group, requests are distributed among backend servers based on the load balancing algorithm configured for the backend server group and the weight set for each backend server.

### Constraints

- If parameter **session-persistence** is configured, parameter **cookie\_name** is available only when the value of **type** is **APP\_COOKIE**.

### URI

POST /v2/{project\_id}/elb/pools

**Table 6-74** Parameter description

| Parameter  | Mandatory | Type   | Description               |
|------------|-----------|--------|---------------------------|
| project_id | Yes       | String | Specifies the project ID. |

### Request

**Table 6-75** Parameter description

| Parameter | Mandatory | Type                        | Description                                                                       |
|-----------|-----------|-----------------------------|-----------------------------------------------------------------------------------|
| pool      | Yes       | <a href="#">Pool object</a> | Specifies the backend server group. For details, see <a href="#">Table 6-76</a> . |

**Table 6-76 pool** parameter description

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id   | No        | String | Specifies the ID of the project where the backend server group is used.<br>The value must be the same as the value of <b>project_id</b> in the token.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| name        | No        | String | Specifies the name of the backend server group.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| description | No        | String | Provides supplementary information about the backend server group.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| protocol    | Yes       | String | Specifies the protocol that the backend server group uses to receive requests.<br>TCP, UDP, and HTTP are supported.<br>When a backend server group is associated with a listener, the relationships between the protocol used by the listener and the protocol of the backend server group are as follows: <ul style="list-style-type: none"><li>• When the protocol used by the listener is <b>UDP</b>, the protocol of the backend server group must be <b>UDP</b>.</li><li>• When the protocol used by the listener is <b>TCP</b>, the protocol of the backend server group must be <b>TCP</b>.</li><li>• When the protocol used by the listener is <b>HTTP</b> or <b>TERMINATED_HTTPS</b>, the protocol of the backend server group must be <b>HTTP</b>.</li></ul> |

| Parameter           | Mandatory | Type                      | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|---------------------|-----------|---------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| lb_algorithm        | Yes       | String                    | <p>Specifies the load balancing algorithm of the backend server group.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN</b>: indicates the weighted round robin algorithm.</li><li>• <b>LEAST_CONNECTIONS</b>: indicates the weighted least connections algorithm.</li><li>• <b>SOURCE_IP</b>: indicates the source IP hash algorithm.</li></ul> <p>When the value is <b>SOURCE_IP</b>, the weights of backend servers in the server group are invalid.</p> |
| admin_state_up      | No        | Boolean                   | <p>Specifies the administrative status of the backend server group.</p> <p>This parameter is reserved, and the default value is <b>true</b>.</p>                                                                                                                                                                                                                                                                                                                                               |
| listener_id         | No        | String                    | <p>Specifies the ID of the listener associated with the backend server group.</p> <p>Specify either <b>listener_id</b> or <b>loadbalancer_id</b>, or both of them.</p>                                                                                                                                                                                                                                                                                                                         |
| loadbalancer_id     | No        | String                    | <p>Specifies the ID of the load balancer associated with the backend server group.</p> <p>Specify either <b>listener_id</b> or <b>loadbalancer_id</b>, or both of them.</p>                                                                                                                                                                                                                                                                                                                    |
| session_persistence | No        | SessionPersistence object | <p>Specifies the sticky session timeout duration in minutes. For details, see <a href="#">Table 6-77</a>.</p> <p>If the value is <b>null</b>, the sticky session feature is disabled.</p>                                                                                                                                                                                                                                                                                                      |

| Parameter         | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                    |
|-------------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_status | No        | String | Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> |
| protection_reason | No        | String | Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .                                                                                                                                                                                                        |

**Table 6-77 session\_persistence** parameter description

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type        | Yes       | String | <p>Specifies the sticky session type.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>SOURCE_IP</b>: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.</li><li>• <b>HTTP_COOKIE</b>: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.</li><li>• <b>APP_COOKIE</b>: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server.</li></ul> <p>When the protocol of the backend server group is TCP, only <b>SOURCE_IP</b> takes effect. When the protocol of the backend server group is HTTP, only <b>HTTP_COOKIE</b> or <b>APP_COOKIE</b> takes effect.</p> |
| cookie_name | No        | String | <p>Specifies the cookie name. The name can contain up to 64 characters, including letters, digits, hyphens (-), and underscores (_).</p> <p>This parameter is mandatory when the sticky session type is <b>APP_COOKIE</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |



| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| persistence_timeout | No        | Integer | <p>Specifies the sticky session timeout duration in minutes.</p> <p>This parameter is invalid when <b>type</b> is set to <b>APP_COOKIE</b>.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none"><li>• When the protocol of the backend server group is TCP or UDP, the value ranges from <b>1</b> to <b>60</b>.</li><li>• When the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>.</li></ul> |

## Response

**Table 6-78** Parameter description

| Parameter | Type                        | Description                                                                       |
|-----------|-----------------------------|-----------------------------------------------------------------------------------|
| pool      | <a href="#">Pool</a> object | Specifies the backend server group. For details, see <a href="#">Table 6-79</a> . |

**Table 6-79** pool parameter description

| Parameter  | Type   | Description                                                                                                                                |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------|
| id         | String | Specifies the ID of the backend server group.                                                                                              |
| tenant_id  | String | <p>Specifies the ID of the project where the backend server group is used.</p> <p>The value contains a maximum of 255 characters.</p>      |
| project_id | String | <p>Specifies the ID of the project to which the backend server group belongs. This parameter has the same meaning as <b>tenant_id</b>.</p> |
| name       | String | <p>Specifies the name of the backend server group.</p> <p>The value contains a maximum of 255 characters.</p>                              |

| Parameter        | Type                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description      | String                          | Provides supplementary information about the backend server group.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| protocol         | String                          | Specifies the protocol that the backend server group uses to receive requests.<br>TCP, UDP, and HTTP are supported.<br>When a backend server group is associated with a listener, the relationships between the protocol used by the listener and the protocol of the backend server group are as follows: <ul style="list-style-type: none"><li>• When the protocol used by the listener is <b>UDP</b>, the protocol of the backend server group must be <b>UDP</b>.</li><li>• When the protocol used by the listener is <b>TCP</b>, the protocol of the backend server group must be <b>TCP</b>.</li><li>• When the protocol used by the listener is <b>HTTP</b> or <b>TERMINATED_HTTPS</b>, the protocol of the backend server group must be <b>HTTP</b>.</li></ul> |
| lb_algorithm     | String                          | Specifies the load balancing algorithm of the backend server group.<br>The value can be: <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN</b>: indicates the weighted round robin algorithm.</li><li>• <b>LEAST_CONNECTIONS</b>: indicates the weighted least connections algorithm.</li><li>• <b>SOURCE_IP</b>: indicates the source IP hash algorithm. When the value is <b>SOURCE_IP</b>, the weights of backend servers in the server group are invalid.</li></ul>                                                                                                                                                                                                                                                                                           |
| members          | Array of <b>Members</b> objects | Lists the IDs of backend servers in the backend server group. For details, see <a href="#">Table 6-80</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| healthmonitor_id | String                          | Specifies the ID of the health check configured for the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Parameter           | Type                                           | Description                                                                                                                                                                                                                                                                                                                                                              |
|---------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up      | Boolean                                        | Specifies the administrative status of the backend server group.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                   |
| listeners           | Array of <a href="#">Listeners</a> objects     | Lists the IDs of listeners associated with the backend server group. For details, see <a href="#">Table 6-81</a> .                                                                                                                                                                                                                                                       |
| loadbalancers       | Array of <a href="#">Loadbalancers</a> objects | Lists the IDs of load balancers associated with the backend server group. For details, see <a href="#">Table 6-82</a> .                                                                                                                                                                                                                                                  |
| session_persistence | <a href="#">SessionPersistence</a> object      | Specifies whether to enable the sticky session feature. For details, see <a href="#">Table 6-83</a> .<br>Once sticky session are enabled, requests from the same client are sent to the same backend server during the session.<br>When sticky sessions are disabled, the value is <b>null</b> .                                                                         |
| protection_status   | String                                         | String<br>Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> |
| protection_reason   | String                                         | String<br>Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .                                                                                                                                                                                                        |

**Table 6-80 members** parameter description

| Parameter | Type   | Description                                        |
|-----------|--------|----------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server. |

**Table 6-81 listeners** parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

**Table 6-82 loadbalancers** parameter description

| Parameter | Type   | Description                                       |
|-----------|--------|---------------------------------------------------|
| id        | String | Specifies the ID of the associated load balancer. |

**Table 6-83 session\_persistence** parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type      | Yes       | String | <p>Specifies the sticky session type.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>SOURCE_IP</b>: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.</li><li>• <b>HTTP_COOKIE</b>: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.</li><li>• <b>APP_COOKIE</b>: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server.</li></ul> <p>When the protocol of the backend server group is TCP, only <b>SOURCE_IP</b> takes effect. When the protocol of the backend server group is HTTP, only <b>HTTP_COOKIE</b> or <b>APP_COOKIE</b> takes effect.</p> |

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cookie_name         | No        | String  | Specifies the cookie name. The name can contain up to 64 characters, including letters, digits, hyphens (-), and underscores (_).<br><br>This parameter is mandatory when the sticky session type is <b>APP_COOKIE</b> .                                                                                                                                                                                                                                                                                            |
| persistence_timeout | No        | Integer | Specifies the sticky session timeout duration in minutes.<br><br>This parameter is invalid when <b>type</b> is set to <b>APP_COOKIE</b> .<br><br>The value range varies depending on the protocol of the backend server group: <ul style="list-style-type: none"><li>• When the protocol of the backend server group is TCP or UDP, the value ranges from <b>1</b> to <b>60</b>.</li><li>• When the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>.</li></ul> |

## Example Request

- Example request 1: Adding an HTTP backend server group  
POST https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/pools  

```
{
 "pool": {
 "lb_algorithm": "ROUND_ROBIN",
 "loadbalancer_id": "63ad9dfe-4750-479f-9630-ada43ccc8117",
 "protocol": "HTTP"
 }
}
```
- Example request 2: Adding a backend server group with the value of **type** set to **APP\_COOKIE**  
POST https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/pools  

```
{
 "pool": {
 "lb_algorithm": "ROUND_ROBIN",
 "loadbalancer_id": "370fb112-e920-486a-b051-1d0d30704dd3",
 "protocol": "HTTP",
 "session_persistence": {
 "cookie_name": "my_cookie",
 "type": "APP_COOKIE",
 "persistence_timeout": 1
 },
 "admin_state_up": true
 }
}
```
- Example request 3: Adding an HTTP backend server group with the value of **type** set to **HTTP\_COOKIE**

POST https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/pools

```
{
 "pool": {
 "lb_algorithm": "ROUND_ROBIN",
 "loadbalancer_id": "63ad9dfe-4750-479f-9630-ada43ccc8117",
 "protocol": "HTTP",
 "session_persistence": {
 "type": "HTTP_COOKIE"
 }
 }
}
```

## Example Response

- Example response 1

```
{
 "pool": {
 "lb_algorithm": "ROUND_ROBIN",
 "protocol": "HTTP",
 "description": "",
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "63ad9dfe-4750-479f-9630-ada43ccc8117"
 }
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "session_persistence": null,
 "healthmonitor_id": null,
 "listeners": [],
 "members": [],
 "id": "4e496951-befb-47bf-9573-c1cd11825c07",
 "name": ""
 }
}
```

- Example response 2

```
{
 "pool": {
 "lb_algorithm": "ROUND_ROBIN",
 "protocol": "HTTP",
 "description": "",
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "6b041b9e-976b-40ba-b075-375be6110b53"
 }
],
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "session_persistence": {
 "cookie_name": "my_cookie",
 "type": "APP_COOKIE",
 "persistence_timeout": 1
 },
 "healthmonitor_id": null,
 "listeners": [
 {
 "id": "370fb112-e920-486a-b051-1d0d30704dd3"
 }
],
 "members": [],
 "id": "307f8968-9474-4d0c-8434-66be09dabcc1",
 "name": ""
 }
}
```

- Example response 3

```
{
 "pool": {
 "lb_algorithm": "ROUND_ROBIN",
 "protocol": "HTTP",
 "description": "",
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "63ad9dfe-4750-479f-9630-ada43ccc8117"
 }
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "session_persistence": {
 "persistence_timeout": 1440,
 "cookie_name": null,
 "type": "HTTP_COOKIE"
 },
 "healthmonitor_id": null,
 "listeners": [],
 "members": [],
 "id": "d46eab56-d76b-4cd3-8952-3c3c4cf113aa",
 "name": ""
 }
}
```

**Status Code**

For details, see [Status Codes](#).

### 6.3.2 Querying Backend Server Groups

**Function**

This API is used to query the backend server groups and display them in a list. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

**URI**

GET /v2/{project\_id}/elb/pools

**Table 6-84** Path parameters

| Parameter  | Mandatory | Type   | Description               |
|------------|-----------|--------|---------------------------|
| project_id | Yes       | String | Specifies the project ID. |

**Table 6-85** Query parameters

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker           | No        | String  | Specifies the ID of the backend server group from which pagination query starts, that is, the ID of the last backend server group on the previous page. If this parameter is not specified, the first page will be queried.<br><br>This parameter must be used together with <b>limit</b> .                                                                                                                                       |
| limit            | No        | Integer | Specifies the number of backend server groups on each page. If this parameter is not set, all backend server groups are queried by default.                                                                                                                                                                                                                                                                                       |
| page_reverse     | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br><br>This parameter must be used together with <b>limit</b> . |
| id               | No        | String  | Specifies the ID of the backend server group.                                                                                                                                                                                                                                                                                                                                                                                     |
| name             | No        | String  | Specifies the name of the backend server group.<br><br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                            |
| description      | No        | String  | Provides supplementary information about the backend server group.<br><br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                         |
| healthmonitor_id | No        | String  | Specifies the ID of the health check configured for the backend server group.                                                                                                                                                                                                                                                                                                                                                     |
| loadbalancer_id  | No        | String  | Specifies the ID of the load balancer associated with the backend server group.                                                                                                                                                                                                                                                                                                                                                   |



| Parameter        | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol         | No        | String | Specifies the protocol that the backend server group uses to receive requests.<br>TCP, UDP, and HTTP are supported.                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| lb_algorithm     | No        | String | Specifies the load balancing algorithm of the backend server group.<br>The value can be: <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN</b>: indicates the weighted round robin algorithm.</li><li>• <b>LEAST_CONNECTIONS</b>: indicates the weighted least connections algorithm.</li><li>• <b>SOURCE_IP</b>: indicates the source IP hash algorithm.</li></ul> When the value is <b>SOURCE_IP</b> , the weights of backend servers in the server group are invalid. For details about parameter <b>weight</b> , see <a href="#">Response</a> . |
| member_address   | No        | String | Lists the IDs of backend servers in the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| member_device_id | No        | String | Specifies the ID of the cloud server used as the backend server in the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | String | <p>Specifies the enterprise project ID. Enterprise projects are used for fine-grained authentication.</p> <ul style="list-style-type: none"><li>• If <b>loadbalancer_id</b> is passed, the ID of the enterprise project to which the load balancer belongs is used for authentication.</li><li>• If <b>loadbalancer_id</b> is not passed but <b>healthmonitor_id</b> is passed, the ID of the enterprise project to which the load balancer belongs is used for authentication.</li><li>• If any of the three parameters <b>enterprise_project_id</b>, <b>loadbalancer_id</b>, or <b>healthmonitor_id</b> is not passed, fine-grained authentication is performed. The <b>elb:loadbalancers:list</b> permissions must be assigned to the user group.</li></ul> |

## Request

None

## Response

**Table 6-86** Parameter description

| Parameter | Type                          | Description                                                                       |
|-----------|-------------------------------|-----------------------------------------------------------------------------------|
| pools     | Array of <b>Pools</b> objects | Specifies the backend server group. For details, see <a href="#">Table 6-87</a> . |

**Table 6-87** pool parameter description

| Parameter | Type   | Description                                   |
|-----------|--------|-----------------------------------------------|
| id        | String | Specifies the ID of the backend server group. |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id   | String | Specifies the ID of the project where the backend server group is used.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| project_id  | String | Specifies the ID of the project to which the backend server group belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| name        | String | Specifies the name of the backend server group.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| description | String | Provides supplementary information about the backend server group.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| protocol    | String | Specifies the protocol that the backend server group uses to receive requests.<br>TCP, UDP, and HTTP are supported.<br>When a backend server group is associated with a listener, the relationships between the protocol used by the listener and the protocol of the backend server group are as follows: <ul style="list-style-type: none"><li>• When the protocol used by the listener is <b>UDP</b>, the protocol of the backend server group must be <b>UDP</b>.</li><li>• When the protocol used by the listener is <b>TCP</b>, the protocol of the backend server group must be <b>TCP</b>.</li><li>• When the protocol used by the listener is <b>HTTP</b> or <b>TERMINATED_HTTPS</b>, the protocol of the backend server group must be <b>HTTP</b>.</li></ul> |

| Parameter           | Type                                  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| lb_algorithm        | String                                | <p>Specifies the load balancing algorithm of the backend server group.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN</b>: indicates the weighted round robin algorithm.</li><li>• <b>LEAST_CONNECTIONS</b>: indicates the weighted least connections algorithm.</li><li>• <b>SOURCE_IP</b>: indicates the source IP hash algorithm. When the value is <b>SOURCE_IP</b>, the weights of backend servers in the server group are invalid.</li></ul> |
| members             | Array of <b>Members</b> objects       | <p>Lists the IDs of backend servers in the backend server group. For details, see <a href="#">Table 6-80</a>.</p>                                                                                                                                                                                                                                                                                                                                                                       |
| healthmonitor_id    | String                                | <p>Specifies the ID of the health check configured for the backend server group.</p>                                                                                                                                                                                                                                                                                                                                                                                                    |
| admin_state_up      | Boolean                               | <p>Specifies the administrative status of the backend server group.</p> <p>This parameter is reserved. The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                                        |
| listeners           | Array of <b>Listeners</b> objects     | <p>Lists the IDs of listeners associated with the backend server group. For details, see <a href="#">Table 6-81</a>.</p>                                                                                                                                                                                                                                                                                                                                                                |
| loadbalancers       | Array of <b>Loadbalancers</b> objects | <p>Lists the IDs of load balancers associated with the backend server group. For details, see <a href="#">Table 6-82</a>.</p>                                                                                                                                                                                                                                                                                                                                                           |
| session_persistence | <b>SessionPersistence</b> object      | <p>Specifies whether to enable the sticky session feature. For details, see <a href="#">Table 6-83</a>.</p> <p>Once sticky session are enabled, requests from the same client are sent to the same backend server during the session.</p> <p>When sticky sessions are disabled, the value is <b>null</b>.</p>                                                                                                                                                                           |

| Parameter         | Type   | Description                                                                                                                                                                                                                                                                                                                                                              |
|-------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_status | String | String<br>Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> |
| protection_reason | String | String<br>Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .                                                                                                                                                                                                        |

**Table 6-88 members** parameter description

| Parameter | Type   | Description                                        |
|-----------|--------|----------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server. |

**Table 6-89 listeners** parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

**Table 6-90 loadbalancers** parameter description

| Parameter | Type   | Description                                       |
|-----------|--------|---------------------------------------------------|
| id        | String | Specifies the ID of the associated load balancer. |

**Table 6-91 session\_persistence** parameter description

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type        | Yes       | String | <p>Specifies the sticky session type.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>SOURCE_IP</b>: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.</li><li>• <b>HTTP_COOKIE</b>: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.</li><li>• <b>APP_COOKIE</b>: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server.</li></ul> <p>When the protocol of the backend server group is TCP, only <b>SOURCE_IP</b> takes effect. When the protocol of the backend server group is HTTP, only <b>HTTP_COOKIE</b> or <b>APP_COOKIE</b> takes effect.</p> |
| cookie_name | No        | String | <p>Specifies the cookie name. The name can contain up to 64 characters, including letters, digits, hyphens (-), and underscores (_).</p> <p>This parameter is mandatory when the sticky session type is <b>APP_COOKIE</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| persistence_timeout | No        | Integer | <p>Specifies the sticky session timeout duration in minutes.</p> <p>This parameter is invalid when <b>type</b> is set to <b>APP_COOKIE</b>.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none"><li>• When the protocol of the backend server group is TCP or UDP, the value ranges from <b>1</b> to <b>60</b>.</li><li>• When the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>.</li></ul> |

## Example Request

- Example request 1: Querying all backend server groups  
GET https://{Endpoint}/v2/1867112d054b427e808cc6096d8193a1/elb/pools
- Example request 2: Querying backend server groups whose load balancing algorithm is **SOURCE\_IP**  
GET https://{Endpoint}/v2/1867112d054b427e808cc6096d8193a1/elb/pools?lb\_algorithm=SOURCE\_IP

## Example Response

- Example response 1

```
{
 "pools": [
 {
 "lb_algorithm": "SOURCE_IP",
 "protocol": "TCP",
 "description": "",
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "07d28d4a-4899-40a3-a939-5d09d69019e1"
 }
],
 "tenant_id": "1867112d054b427e808cc6096d8193a1",
 "project_id": "1867112d054b427e808cc6096d8193a1",
 "session_persistence": null,
 "healthmonitor_id": null,
 "listeners": [
 {
 "id": "1b421c2d-7e78-4a78-9ee4-c8ccba41f15b"
 }
],
 "members": [
 {
 "id": "88f9c079-29cb-435a-b98f-0c5c0b90c2bd"
 },
 {
 "id": "2f4c9644-d5d2-4cf8-a3c0-944239a4f58c"
 }
],
 "id": "3a9f50bb-f041-4eac-a117-82472d8a0007",
 }
]
}
```

```
 "name": "my-pool"
 }
]
}
```

• Example response 2

```
{
 "pools": [
 {
 "lb_algorithm": "SOURCE_IP",
 "protocol": "TCP",
 "description": "",
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "07d28d4a-4899-40a3-a939-5d09d69019e1"
 }
],
 "tenant_id": "1867112d054b427e808cc6096d8193a1",
 "project_id": "1867112d054b427e808cc6096d8193a1",
 "session_persistence": null,
 "healthmonitor_id": null,
 "listeners": [
 {
 "id": "1b421c2d-7e78-4a78-9ee4-c8ccba41f15b"
 }
],
 "members": [
 {
 "id": "88f9c079-29cb-435a-b98f-0c5c0b90c2bd"
 },
 {
 "id": "2f4c9644-d5d2-4cf8-a3c0-944239a4f58c"
 }
],
 "id": "3a9f50bb-f041-4eac-a117-82472d8a0007",
 "name": "my-pool"
 }
]
}
```

Status Code

For details, see [Status Codes](#).

6.3.3 Querying Details of a Backend Server Group

Function

This API is used to query details about a backend server group using its ID.

URI

GET /v2/{project\_id}/elb/pools/{pool\_id}

Table 6-92 Parameter description

| Parameter  | Mandator<br>y | Type       | Description               |
|------------|---------------|------------|---------------------------|
| project_id | Yes           | Strin<br>g | Specifies the project ID. |



| Parameter | Mandatory | Type   | Description                                   |
|-----------|-----------|--------|-----------------------------------------------|
| pool_id   | Yes       | String | Specifies the ID of the backend server group. |

## Request

None

## Response

**Table 6-93** Response parameters

| Parameter | Type                        | Description                                                                       |
|-----------|-----------------------------|-----------------------------------------------------------------------------------|
| pool      | <a href="#">Pool</a> object | Specifies the backend server group. For details, see <a href="#">Table 6-94</a> . |

**Table 6-94** pool parameter description

| Parameter   | Type   | Description                                                                                                                          |
|-------------|--------|--------------------------------------------------------------------------------------------------------------------------------------|
| id          | String | Specifies the ID of the backend server group.                                                                                        |
| tenant_id   | String | Specifies the ID of the project where the backend server group is used.<br>The value contains a maximum of 255 characters.           |
| project_id  | String | Specifies the ID of the project to which the backend server group belongs. This parameter has the same meaning as <b>tenant_id</b> . |
| name        | String | Specifies the name of the backend server group.<br>The value contains a maximum of 255 characters.                                   |
| description | String | Provides supplementary information about the backend server group.<br>The value contains a maximum of 255 characters.                |

| Parameter        | Type                              | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------|-----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol         | String                            | <p>Specifies the protocol that the backend server group uses to receive requests. TCP, UDP, and HTTP are supported.</p> <p>When a backend server group is associated with a listener, the relationships between the protocol used by the listener and the protocol of the backend server group are as follows:</p> <ul style="list-style-type: none"><li>• When the protocol used by the listener is <b>UDP</b>, the protocol of the backend server group must be <b>UDP</b>.</li><li>• When the protocol used by the listener is <b>TCP</b>, the protocol of the backend server group must be <b>TCP</b>.</li><li>• When the protocol used by the listener is <b>HTTP</b> or <b>TERMINATED_HTTPS</b>, the protocol of the backend server group must be <b>HTTP</b>.</li></ul> |
| lb_algorithm     | String                            | <p>Specifies the load balancing algorithm of the backend server group.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN</b>: indicates the weighted round robin algorithm.</li><li>• <b>LEAST_CONNECTIONS</b>: indicates the weighted least connections algorithm.</li><li>• <b>SOURCE_IP</b>: indicates the source IP hash algorithm. When the value is <b>SOURCE_IP</b>, the weights of backend servers in the server group are invalid.</li></ul>                                                                                                                                                                                                                                                                                        |
| members          | Array of <b>Members</b> objects   | <p>Lists the IDs of backend servers in the backend server group. For details, see <a href="#">Table 6-80</a>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| healthmonitor_id | String                            | <p>Specifies the ID of the health check configured for the backend server group.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| admin_state_up   | Boolean                           | <p>Specifies the administrative status of the backend server group.</p> <p>This parameter is reserved. The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| listeners        | Array of <b>Listeners</b> objects | <p>Lists the IDs of listeners associated with the backend server group. For details, see <a href="#">Table 6-81</a>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

| Parameter           | Type                                           | Description                                                                                                                                                                                                                                                                                                                                                              |
|---------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancers       | Array of <a href="#">Loadbalancers</a> objects | Lists the IDs of load balancers associated with the backend server group. For details, see <a href="#">Table 6-82</a> .                                                                                                                                                                                                                                                  |
| session_persistence | <a href="#">SessionPersistence</a> object      | Specifies whether to enable the sticky session feature. For details, see <a href="#">Table 6-83</a> .<br>Once sticky session are enabled, requests from the same client are sent to the same backend server during the session.<br>When sticky sessions are disabled, the value is <b>null</b> .                                                                         |
| protection_status   | String                                         | String<br>Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> |
| protection_reason   | String                                         | String<br>Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .                                                                                                                                                                                                        |

**Table 6-95 members** parameter description

| Parameter | Type   | Description                                        |
|-----------|--------|----------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server. |

**Table 6-96 listeners** parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

**Table 6-97 loadbalancers** parameter description

| Parameter | Type   | Description                                       |
|-----------|--------|---------------------------------------------------|
| id        | String | Specifies the ID of the associated load balancer. |

**Table 6-98 session\_persistence** parameter description

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type        | Yes       | String | <p>Specifies the sticky session type.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>SOURCE_IP</b>: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.</li><li>• <b>HTTP_COOKIE</b>: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.</li><li>• <b>APP_COOKIE</b>: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server.</li></ul> <p>When the protocol of the backend server group is TCP, only <b>SOURCE_IP</b> takes effect. When the protocol of the backend server group is HTTP, only <b>HTTP_COOKIE</b> or <b>APP_COOKIE</b> takes effect.</p> |
| cookie_name | No        | String | <p>Specifies the cookie name. The name can contain up to 64 characters, including letters, digits, hyphens (-), and underscores (_).</p> <p>This parameter is mandatory when the sticky session type is <b>APP_COOKIE</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| persistence_timeout | No        | Integer | <p>Specifies the sticky session timeout duration in minutes.</p> <p>This parameter is invalid when <b>type</b> is set to <b>APP_COOKIE</b>.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none"><li>• When the protocol of the backend server group is TCP or UDP, the value ranges from <b>1</b> to <b>60</b>.</li><li>• When the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>.</li></ul> |

## Example Request

- Example request: Querying details of a backend server group  
GET [https://\[Endpoint\]/v2/1867112d054b427e808cc6096d8193a1/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332](https://[Endpoint]/v2/1867112d054b427e808cc6096d8193a1/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332)

## Example Response

- Example response 1

```
{
 "pool": {
 "lb_algorithm": "SOURCE_IP",
 "protocol": "TCP",
 "description": "",
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "6f52004c-3fe9-4c09-b8ce-ed9d9c74a3b1"
 }
],
 "tenant_id": "1867112d054b427e808cc6096d8193a1",
 "project_id": "1867112d054b427e808cc6096d8193a1",
 "session_persistence": null,
 "healthmonitor_id": null,
 "listeners": [
 {
 "id": "6e29b2cd-4e53-40f6-ae7b-29e918de67f2"
 }
],
 "members": [],
 "id": "5a9a3e9e-d1aa-448e-af37-a70171f2a332",
 "name": "my-pool"
 }
}
```

## Status Code

For details, see [Status Codes](#).

## 6.3.4 Updating a Backend Server Group

### Function

This API is used to update a backend server group.

### Constraints

If the provisioning status of the load balancer associated with a backend server group is not **ACTIVE**, the backend server group cannot be updated.

### URI

PUT /v2/{project\_id}/elb/pools/{pool\_id}

**Table 6-99** Parameter description

| Parameter  | Mandatory | Type   | Description                                   |
|------------|-----------|--------|-----------------------------------------------|
| project_id | Yes       | String | Specifies the project ID.                     |
| pool_id    | Yes       | String | Specifies the ID of the backend server group. |

### Request

**Table 6-100** Parameter description

| Parameter | Mandatory | Type                        | Description                                                                        |
|-----------|-----------|-----------------------------|------------------------------------------------------------------------------------|
| pool      | Yes       | <a href="#">Pool</a> object | Specifies the backend server group. For details, see <a href="#">Table 6-101</a> . |

**Table 6-101** pool parameter description

| Parameter | Mandatory | Type   | Description                                                                                        |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------|
| name      | No        | String | Specifies the name of the backend server group.<br>The value contains a maximum of 255 characters. |

| Parameter           | Mandatory | Type                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|-----------|----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description         | No        | String                           | Provides supplementary information about the backend server group.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                         |
| lb_algorithm        | No        | String                           | Specifies the load balancing algorithm of the backend server group.<br>The value can be: <ul style="list-style-type: none"><li>● <b>ROUND_ROBIN</b>: indicates the weighted round robin algorithm.</li><li>● <b>LEAST_CONNECTIONS</b>: indicates the weighted least connections algorithm.</li><li>● <b>SOURCE_IP</b>: indicates the source IP hash algorithm.</li></ul> When the value is <b>SOURCE_IP</b> , the weights of backend servers in the server group are invalid. |
| admin_state_up      | No        | Boolean                          | Specifies the administrative status of the backend server group.<br>This parameter is reserved, and the default value is <b>true</b> .                                                                                                                                                                                                                                                                                                                                        |
| session_persistence | No        | <b>SessionPersistence</b> object | Specifies whether to enable the sticky session feature. For details, see <a href="#">Table 6-102</a> .<br>Once sticky session are enabled, requests from the same client are sent to the same backend server during the session.<br>When sticky sessions are disabled, the value is <b>null</b> .                                                                                                                                                                             |

| Parameter         | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                    |
|-------------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_status | No        | String | Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> |
| protection_reason | No        | String | Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .                                                                                                                                                                                                        |



**Table 6-102 session\_persistence** parameter description

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type        | Yes       | String | <p>Specifies the sticky session type.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>SOURCE_IP</b>: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.</li><li>• <b>HTTP_COOKIE</b>: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.</li><li>• <b>APP_COOKIE</b>: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server.</li></ul> <p>When the protocol of the backend server group is TCP, only <b>SOURCE_IP</b> takes effect. When the protocol of the backend server group is HTTP, only <b>HTTP_COOKIE</b> or <b>APP_COOKIE</b> takes effect.</p> |
| cookie_name | No        | String | <p>Specifies the cookie name. The name can contain up to 64 characters, including letters, digits, hyphens (-), and underscores (_).</p> <p>This parameter is mandatory when the sticky session type is <b>APP_COOKIE</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| persistence_timeout | No        | Integer | <p>Specifies the sticky session timeout duration in minutes.</p> <p>This parameter is invalid when <b>type</b> is set to <b>APP_COOKIE</b>.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none"><li>• When the protocol of the backend server group is TCP or UDP, the value ranges from <b>1</b> to <b>60</b>.</li><li>• When the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>.</li></ul> |

## Response

**Table 6-103** Response parameters

| Parameter | Type                        | Description                                                                        |
|-----------|-----------------------------|------------------------------------------------------------------------------------|
| pool      | <a href="#">Pool</a> object | Specifies the backend server group. For details, see <a href="#">Table 6-104</a> . |

**Table 6-104** pool parameter description

| Parameter  | Type   | Description                                                                                                                                |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------|
| id         | String | Specifies the ID of the backend server group.                                                                                              |
| tenant_id  | String | <p>Specifies the ID of the project where the backend server group is used.</p> <p>The value contains a maximum of 255 characters.</p>      |
| project_id | String | <p>Specifies the ID of the project to which the backend server group belongs. This parameter has the same meaning as <b>tenant_id</b>.</p> |
| name       | String | <p>Specifies the name of the backend server group.</p> <p>The value contains a maximum of 255 characters.</p>                              |

| Parameter        | Type                            | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------|---------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description      | String                          | Provides supplementary information about the backend server group.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| protocol         | String                          | Specifies the protocol that the backend server group uses to receive requests.<br>TCP, UDP, and HTTP are supported.<br>When a backend server group is associated with a listener, the relationships between the protocol used by the listener and the protocol of the backend server group are as follows: <ul style="list-style-type: none"><li>• When the protocol used by the listener is <b>UDP</b>, the protocol of the backend server group must be <b>UDP</b>.</li><li>• When the protocol used by the listener is <b>TCP</b>, the protocol of the backend server group must be <b>TCP</b>.</li><li>• When the protocol used by the listener is <b>HTTP</b> or <b>TERMINATED_HTTPS</b>, the protocol of the backend server group must be <b>HTTP</b>.</li></ul> |
| lb_algorithm     | String                          | Specifies the load balancing algorithm of the backend server group.<br>The value can be: <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN</b>: indicates the weighted round robin algorithm.</li><li>• <b>LEAST_CONNECTIONS</b>: indicates the weighted least connections algorithm.</li><li>• <b>SOURCE_IP</b>: indicates the source IP hash algorithm. When the value is <b>SOURCE_IP</b>, the weights of backend servers in the server group are invalid.</li></ul>                                                                                                                                                                                                                                                                                           |
| members          | Array of <b>Members</b> objects | Lists the IDs of backend servers in the backend server group. For details, see <a href="#">Table 6-80</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| healthmonitor_id | String                          | Specifies the ID of the health check configured for the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Parameter           | Type                                           | Description                                                                                                                                                                                                                                                                                                                                                              |
|---------------------|------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up      | Boolean                                        | Specifies the administrative status of the backend server group.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                   |
| listeners           | Array of <a href="#">Listeners</a> objects     | Lists the IDs of listeners associated with the backend server group. For details, see <a href="#">Table 6-81</a> .                                                                                                                                                                                                                                                       |
| loadbalancers       | Array of <a href="#">Loadbalancers</a> objects | Lists the IDs of load balancers associated with the backend server group. For details, see <a href="#">Table 6-82</a> .                                                                                                                                                                                                                                                  |
| session_persistence | <a href="#">SessionPersistence</a> object      | Specifies whether to enable the sticky session feature. For details, see <a href="#">Table 6-83</a> .<br>Once sticky session are enabled, requests from the same client are sent to the same backend server during the session.<br>When sticky sessions are disabled, the value is <b>null</b> .                                                                         |
| protection_status   | String                                         | String<br>Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>nonProtection</b> (default): Modification protection is not enabled.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> |
| protection_reason   | String                                         | String<br>Specifies the reason to enable modification protection. This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .                                                                                                                                                                                                        |

**Table 6-105 members** parameter description

| Parameter | Type   | Description                                        |
|-----------|--------|----------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server. |

**Table 6-106 listeners** parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

**Table 6-107 loadbalancers** parameter description

| Parameter | Type   | Description                                       |
|-----------|--------|---------------------------------------------------|
| id        | String | Specifies the ID of the associated load balancer. |

**Table 6-108 session\_persistence** parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type      | Yes       | String | <p>Specifies the sticky session type.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>SOURCE_IP</b>: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.</li><li>• <b>HTTP_COOKIE</b>: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.</li><li>• <b>APP_COOKIE</b>: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server.</li></ul> <p>When the protocol of the backend server group is TCP, only <b>SOURCE_IP</b> takes effect. When the protocol of the backend server group is HTTP, only <b>HTTP_COOKIE</b> or <b>APP_COOKIE</b> takes effect.</p> |

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cookie_name         | No        | String  | Specifies the cookie name. The name can contain up to 64 characters, including letters, digits, hyphens (-), and underscores (_).<br><br>This parameter is mandatory when the sticky session type is <b>APP_COOKIE</b> .                                                                                                                                                                                                                                                                                            |
| persistence_timeout | No        | Integer | Specifies the sticky session timeout duration in minutes.<br><br>This parameter is invalid when <b>type</b> is set to <b>APP_COOKIE</b> .<br><br>The value range varies depending on the protocol of the backend server group: <ul style="list-style-type: none"><li>• When the protocol of the backend server group is TCP or UDP, the value ranges from <b>1</b> to <b>60</b>.</li><li>• When the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>.</li></ul> |

## Example Request

- Example request: Updating the name, description, and load balancing algorithm of a backend server group  
PUT https://{Endpoint}/v2/1a3e005cf9ce40308c900bcb08e5320c/elb/pools/12ff63af-4127-4074-a251-bcb2ecc53ebe  

```
{
 "pool": {
 "name": "pool2",
 "description": "pool two",
 "lb_algorithm": "LEAST_CONNECTIONS"
 }
}
```

## Example Response

- Example response 1  

```
{
 "pool": {
 "lb_algorithm": "LEAST_CONNECTIONS",
 "protocol": "HTTP",
 "description": "pool two",
 "admin_state_up": false,
 "tenant_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "project_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "session_persistence": {
 "cookie_name": null,
 "type": "HTTP_COOKIE",
 "persistence_timeout": 1440
 },
 },
}
```

```
{
 "healthmonitor_id": null,
 "listeners": [
 {
 "id": "39de4d56-d663-46e5-85a1-5b9d5fa17829"
 }
],
 "members": [],
 "id": "12ff63af-4127-4074-a251-bcb2ecc53ebe",
 "name": "pool2"
}
```

## Status Code

For details, see [Status Codes](#).

## 6.3.5 Deleting a Backend Server Group

### Function

This API is used to delete a backend server group.

### Constraints

Before deleting a backend server group, remove all backend servers, delete the health check, and disassociate forwarding policies from the backend server group by changing the value of **redirect\_pool\_id** to **null**. For details, see [Updating a Forwarding Policy](#).

### URI

DELETE /v2/{project\_id}/elb/pools/{pool\_id}

**Table 6-109** Parameter description

| Parameter  | Mandator<br>y | Type       | Description                                   |
|------------|---------------|------------|-----------------------------------------------|
| project_id | Yes           | Strin<br>g | Specifies the project ID.                     |
| pool_id    | Yes           | Strin<br>g | Specifies the ID of the backend server group. |

### Request

None

### Response

None

## Example Request

- Example request: Deleting a backend server group  
DELETE https://{Endpoint}/v2/1a3e005cf9ce40308c900bcb08e5320c/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

# 6.4 Backend Server

## 6.4.1 Adding a Backend Server

### Function

This API is used to add a backend server to a specific backend server group. After a backend server group is added to a listener, traffic is distributed to backend servers in this server group using the specified load balancing algorithm.

### Constraints

Two backend servers in a backend server group cannot have the same private IP address or port number.

The subnet specified during server creation must be in the same VPC as the subnet from which the private IP address of the load balancer is assigned.

You can call this API for a maximum of 200 times per minute globally.

### URI

POST /v2/{project\_id}/elb/pools/{pool\_id}/members

**Table 6-110** Parameter description

| Parameter  | Mandator<br>y | Type       | Description                                   |
|------------|---------------|------------|-----------------------------------------------|
| project_id | Yes           | Strin<br>g | Specifies the project ID.                     |
| pool_id    | Yes           | Strin<br>g | Specifies the ID of the backend server group. |



## Request

**Table 6-111** Parameter description

| Parameter | Mandatory | Type          | Description                                                                  |
|-----------|-----------|---------------|------------------------------------------------------------------------------|
| member    | Yes       | Member object | Specifies the backend server. For details, see <a href="#">Table 6-112</a> . |

**Table 6-112 member** parameter description

| Parameter     | Mandatory | Type    | Description                                                                                                                                                                                                                                                                        |
|---------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id     | No        | String  | Specifies the ID of the project where the backend server is used.<br>The value must be the same as the value of <b>project_id</b> in the token.<br>The value contains a maximum of 255 characters.                                                                                 |
| name          | No        | String  | Specifies the backend server name. The value is an empty character string by default.<br>The value contains a maximum of 255 characters.                                                                                                                                           |
| address       | Yes       | String  | Specifies the private IP address of the backend server. This IP address must be in the subnet specified by <b>subnet_id</b> .<br>This parameter can be set only to the IP address of the primary NIC, for example, 192.168.3.11.<br>The value contains a maximum of 64 characters. |
| protocol_port | Yes       | Integer | Specifies the port used by the backend server. The port number ranges from 1 to 65535.                                                                                                                                                                                             |
| subnet_id     | Yes       | String  | Specifies the ID of the subnet where the backend server resides.<br>The private IP address of the backend server is in this subnet.<br>Only IPv4 subnets are supported.                                                                                                            |

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                        |
|----------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | Specifies the administrative status of the backend server.<br>This parameter is reserved, and the default value is <b>true</b> .                                                                   |
| weight         | No        | Integer | Specifies the backend server weight. The value ranges from <b>0</b> to <b>100</b> .<br>If the value is <b>0</b> , the backend server will not accept new requests. The default value is <b>1</b> . |

## Response

**Table 6-113** Parameter description

| Parameter | Type                 | Description                                                                  |
|-----------|----------------------|------------------------------------------------------------------------------|
| member    | <b>Member</b> object | Specifies the backend server. For details, see <a href="#">Table 6-114</a> . |

**Table 6-114** member parameter description

| Parameter  | Type   | Description                                                                                                                                                                                            |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id         | String | Specifies the backend server ID.<br><b>NOTE</b><br>The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer. |
| tenant_id  | String | Specifies the ID of the project where the backend server is used.<br>The value contains a maximum of 255 characters.                                                                                   |
| project_id | String | Specifies the ID of the project to which the backend server belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                         |
| name       | String | Specifies the backend server name.<br>The value contains a maximum of 255 characters.                                                                                                                  |

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| address          | String  | <p>Specifies the private IP address of the backend server. This IP address must be in the subnet specified by <b>subnet_id</b>.</p> <p>This parameter can be set only to the IP address of the primary NIC, for example, 192.168.3.11.</p> <p>The value contains a maximum of 64 characters.</p>                                                                                                                                                |
| protocol_port    | Integer | <p>Specifies the port used by the backend server. The port number ranges from 1 to 65535.</p>                                                                                                                                                                                                                                                                                                                                                   |
| subnet_id        | String  | <p>Specifies the ID of the subnet where the backend server resides. The private IP address of the backend server is in this subnet.</p> <p>IPv6 subnets are not supported.</p>                                                                                                                                                                                                                                                                  |
| admin_state_up   | Boolean | <p>Specifies the administrative status of the backend server.</p> <p>This parameter is reserved. The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                      |
| weight           | Integer | <p>Specifies the backend server weight. The value ranges from <b>0</b> to <b>100</b>.</p> <p>If the value is <b>0</b>, the backend server will not accept new requests. The default value is <b>1</b>.</p>                                                                                                                                                                                                                                      |
| operating_status | String  | <p>Specifies the health check result of the backend server. The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>ONLINE</b>: The backend server is running normally.</li><li>• <b>NO_MONITOR</b>: No health check is configured for the backend server group that the backend server belongs to.</li><li>• <b>OFFLINE</b>: The cloud server used as the backend server is stopped or does not exist.</li></ul> |

## Example Request

- Adding a backend server

Obtain the values of **subnet\_id** and **ip\_address** by querying the subnet ID and IP address of the server associated with the load balancer.

Alternatively, query the subnet ID and IP address using the server ID. **device\_id** in the request indicates the server ID. Obtain the values of **subnet\_id** and **ip\_address** of the primary NIC (the port for which **primary\_interface** is **true**) in the response body.

POST <https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members>

```
{
 "member": {
 "subnet_id": "33d8b01a-bbe6-41f4-bc45-78a1d284d503",
 "protocol_port": 88,
 "name": "member-jy-tt-1",
 "address": "192.168.44.11"
 }
}
```

## Example Response

- Example response

```
{
 "member": {
 "name": "member-jy-tt-1",
 "weight": 1,
 "admin_state_up": true,
 "subnet_id": "33d8b01a-bbe6-41f4-bc45-78a1d284d503",
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "address": "192.168.44.11",
 "protocol_port": 88,
 "operating_status": "ONLINE",
 "id": "c0042496-e220-44f6-914b-e6ca33bab503"
 }
}
```

## Status Code

For details, see [Status Codes](#).

## 6.4.2 Querying Backend Servers

### Function

This API is used to query backend servers in a specific backend server group. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

### URI

GET [/v2/{project\\_id}/elb/pools/{pool\\_id}/members](#)

**Table 6-115** Path parameters

| Parameter  | Mandatory | Type   | Description                                   |
|------------|-----------|--------|-----------------------------------------------|
| project_id | Yes       | String | Specifies the project ID.                     |
| pool_id    | Yes       | String | Specifies the ID of the backend server group. |

**Table 6-116** Query parameters

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker       | No        | String  | Specifies the ID of the backend server from which pagination query starts, that is, the ID of the last backend server on the previous page. If this parameter is not specified, the first page will be queried.<br><br>This parameter must be used together with <b>limit</b> .                                                                                                                                                   |
| limit        | No        | Integer | Specifies the number of backend servers on each page. If this parameter is not set, all backend servers are queried by default.                                                                                                                                                                                                                                                                                                   |
| page_reverse | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br><br>This parameter must be used together with <b>limit</b> . |
| id           | No        | String  | Specifies the backend server ID.<br><b>NOTE</b><br>The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.                                                                                                                                                                                                                            |

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                  |
|----------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id      | No        | String  | Specifies the ID of the project where the backend server is used.<br>The value contains a maximum of 255 characters.                                                                                                                                         |
| project_id     | No        | String  | Specifies the ID of the project to which the backend server belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                               |
| name           | No        | String  | Specifies the backend server name. The value contains a maximum of 255 characters.<br><b>NOTE</b><br>The value of this parameter is not the name of server. It is the name automatically generated for the backend server associated with the load balancer. |
| address        | No        | String  | Specifies the private IP address of the backend server.<br>The value contains a maximum of 64 characters.                                                                                                                                                    |
| protocol_port  | No        | Integer | Specifies the port used by the backend server.                                                                                                                                                                                                               |
| subnet_id      | No        | String  | Specifies the ID of the subnet where the backend server resides.                                                                                                                                                                                             |
| admin_state_up | No        | Boolean | Specifies the administrative status of the backend server.<br>This parameter is reserved, and the default value is <b>true</b> .                                                                                                                             |
| weight         | No        | Integer | Specifies the backend server weight.                                                                                                                                                                                                                         |

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enterprise_project_id | No        | String | <p>Specifies the enterprise project ID.</p> <ul style="list-style-type: none"><li>If <b>enterprise_project_id</b> is not passed, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The <b>elb:*list</b> permissions must be assigned to the user group.</li><li>If <b>enterprise_project_id</b> is passed, the value can be a specific enterprise project ID or <b>all_granted_eps</b>. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is <b>all_granted_eps</b>, resources in the enterprise projects with the <b>elb:*list</b> permissions are queried.</li></ul> |

## Request

None

## Response

**Table 6-117** Parameter description

| Parameter | Type                            | Description                                                                                       |
|-----------|---------------------------------|---------------------------------------------------------------------------------------------------|
| members   | Array of <b>Members</b> objects | Lists backend servers in the backend server group. For details, see <a href="#">Table 6-118</a> . |

**Table 6-118** members parameter description

| Parameter | Type   | Description                                                                                                                                                                                                           |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | String | <p>Specifies the backend server ID.</p> <p><b>NOTE</b></p> <p>The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.</p> |

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                        |
|----------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id      | String  | Specifies the ID of the project where the backend server is used.<br>The value contains a maximum of 255 characters.                                                                                                                                                               |
| project_id     | String  | Specifies the ID of the project to which the backend server belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                     |
| name           | String  | Specifies the backend server name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                              |
| address        | String  | Specifies the private IP address of the backend server. This IP address must be in the subnet specified by <b>subnet_id</b> .<br>This parameter can be set only to the IP address of the primary NIC, for example, 192.168.3.11.<br>The value contains a maximum of 64 characters. |
| protocol_port  | Integer | Specifies the port used by the backend server.<br>The port number ranges from 1 to 65535.                                                                                                                                                                                          |
| subnet_id      | String  | Specifies the ID of the subnet where the backend server resides. The private IP address of the backend server is in this subnet.<br>IPv6 subnets are not supported.                                                                                                                |
| admin_state_up | Boolean | Specifies the administrative status of the backend server.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                   |
| weight         | Integer | Specifies the backend server weight. The value ranges from <b>0</b> to <b>100</b> .<br>If the value is <b>0</b> , the backend server will not accept new requests. The default value is <b>1</b> .                                                                                 |



| Parameter        | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status | String | <p>Specifies the health check result of the backend server. The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>ONLINE</b>: The backend server is running normally.</li><li>• <b>NO_MONITOR</b>: No health check is configured for the backend server group that the backend server belongs to.</li><li>• <b>OFFLINE</b>: The cloud server used as the backend server is stopped or does not exist.</li></ul> |

## Example Request

- Example request 1: Querying all backend servers  
GET https://{Endpoint}/v2/1a3e005cf9ce40308c900bcb08e5320c/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members
- Example request 2: Querying the backend cloud server whose IP address is 10.0.0.8 and port number is 80  
GET https://{Endpoint}/v2/1a3e005cf9ce40308c900bcb08e5320c/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members?address=10.0.0.8&protocol\_port=80

## Example Response

- Example response 1

```
{
 "members": [
 {
 "address": "10.0.0.8",
 "admin_state_up": true,
 "id": "9a7aff27-fd41-4ec1-ba4c-3eb92c629313",
 "protocol_port": 80,
 "subnet_id": "013d3059-87a4-45a5-91e9-d721068ae0b2",
 "tenant_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "project_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "weight": 1,
 "operating_status": "ONLINE",
 "name": "member-name"
 }
]
}
```
- Example response 2

```
{
 "members": [
 {
 "address": "10.0.0.8",
 "admin_state_up": true,
 "id": "9a7aff27-fd41-4ec1-ba4c-3eb92c629313",
 "protocol_port": 80,
 "subnet_id": "013d3059-87a4-45a5-91e9-d721068ae0b2",
 "tenant_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "project_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "weight": 1,
 "operating_status": "ONLINE",
 "name": "member-name"
 }
]
}
```

Status Code

For details, see [Status Codes](#).

6.4.3 Querying Details of a Backend Server

Function

This API is used to query details of a backend server.

URI

GET /v2/{project\_id}/elb/pools/{pool\_id}/members/{member\_id}

Table 6-119 Parameter description

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | Specifies the project ID.                                                                                                                                                                                                                                                                                                                                                  |
| pool_id    | Yes       | String | Specifies the ID of the backend server group.                                                                                                                                                                                                                                                                                                                              |
| member_id  | Yes       | String | Specifies the backend server ID.<br><b>NOTE</b> <ul style="list-style-type: none"><li>The value of this parameter is not the ID of the server. It is an ID automatically generated for the backend server that is associated with the load balancer.</li><li>You can obtain this value by calling the API described in <a href="#">Querying Backend Servers</a>.</li></ul> |

Request

None

Response

Table 6-120 Parameter description

| Parameter | Type                          | Description                                                                  |
|-----------|-------------------------------|------------------------------------------------------------------------------|
| member    | <a href="#">Member</a> object | Specifies the backend server. For details, see <a href="#">Table 6-121</a> . |

**Table 6-121 member** parameter description

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                        |
|----------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the backend server ID.<br><b>NOTE</b><br>The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.                                                                             |
| tenant_id      | String  | Specifies the ID of the project where the backend server is used.<br>The value contains a maximum of 255 characters.                                                                                                                                                               |
| project_id     | String  | Specifies the ID of the project to which the backend server belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                     |
| name           | String  | Specifies the backend server name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                              |
| address        | String  | Specifies the private IP address of the backend server. This IP address must be in the subnet specified by <b>subnet_id</b> .<br>This parameter can be set only to the IP address of the primary NIC, for example, 192.168.3.11.<br>The value contains a maximum of 64 characters. |
| protocol_port  | Integer | Specifies the port used by the backend server. The port number ranges from 1 to 65535.                                                                                                                                                                                             |
| subnet_id      | String  | Specifies the ID of the subnet where the backend server resides. The private IP address of the backend server is in this subnet.<br>IPv6 subnets are not supported.                                                                                                                |
| admin_state_up | Boolean | Specifies the administrative status of the backend server.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                   |

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| weight           | Integer | Specifies the backend server weight. The value ranges from <b>0</b> to <b>100</b> .<br>If the value is <b>0</b> , the backend server will not accept new requests. The default value is <b>1</b> .                                                                                                                                                                                                                                       |
| operating_status | String  | Specifies the health check result of the backend server. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>ONLINE</b>: The backend server is running normally.</li><li>• <b>NO_MONITOR</b>: No health check is configured for the backend server group that the backend server belongs to.</li><li>• <b>OFFLINE</b>: The cloud server used as the backend server is stopped or does not exist.</li></ul> |

## Example Request

- Example request: Querying details of a backend server  
GET https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members/cf024846-7516-4e3a-b0fb-6590322c836f  
Example request 2: Querying the EIP bound to a load balancer
- For details, see [Querying EIPs](#).
- Example request  
GET https://{EIP\_Endpoint}/v1/{project\_id}/publicips?port\_id={vip\_port\_id}  
**vip\_port\_id** is the value of **vip\_port\_id** of the load balancer.

## Example Response

- Example response 1

```
{
 "member": {
 "name": "",
 "weight": 1,
 "admin_state_up": true,
 "subnet_id": "823d5866-6e30-45c2-9b1a-a1ebc3757fdb",
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "address": "192.172.3.100",
 "protocol_port": 8080,
 "operating_status": "ONLINE",
 "id": "e58f5bfa-0e46-4bc5-951c-8473d3e5f24a"
 }
}
```
- Example response 2

```
{
 "publicips": [
 {
 "id": "6285e7be-fd9f-497c-bc2d-dd0bdea6efe0",
```

```
 "status": "DOWN",
 "profile": {
 "user_id": "35f2b308f5d64441a6fa7999fbcd4321",
 "product_id": "00301-48027-0--0",
 "region_id": "xxx",
 "order_id": "xxxxxxxx"
 },
 "type": "5_bgp",
 "public_ip_address": "161.xx.xx.9",
 "private_ip_address": "192.168.2.4",
 "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
 "create_time": "2015-07-16 04:22:32",
 "bandwidth_id": "3fa5b383-5a73-4dcb-a314-c6128546d855",
 "bandwidth_share_type": "PER",
 "bandwidth_size": 5,
 "bandwidth_name": "bandwidth-test",
 "enterprise_project_id": "b261ac1f-2489-4bc7-b31b-c33c3346a439",
 "ip_version": 4,
 "port_id": "c7157e7a-036a-42ca-8474-100be22e3727"
 }
}
```

**public\_ip\_address** indicates the EIP bound to the load balancer.

Status Code

For details, see [Status Codes](#).

6.4.4 Updating a Backend Server

Function

This API is used to update a backend server. You can modify its name and weight. You can set a larger weight for backend servers that can receive more traffic.

Constraints

If the provisioning status of the associated load balancer is not **ACTIVE**, the backend server cannot be updated.

URI

PUT /v2/{project\_id}/elb/pools/{pool\_id}/members/{member\_id}

Table 6-122 Parameter description

| Parameter  | Mandator<br>y | Type       | Description                                   |
|------------|---------------|------------|-----------------------------------------------|
| project_id | Yes           | Strin<br>g | Specifies the project ID.                     |
| pool_id    | Yes           | Strin<br>g | Specifies the ID of the backend server group. |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                           |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_id | Yes       | String | <p>Specifies the backend server ID.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>The value of this parameter is not the ID of the server. It is an ID automatically generated for the backend server that is associated with the load balancer.</li><li>You can obtain this value by calling the API described in <a href="#">Querying Backend Servers</a>.</li></ul> |

## Request

**Table 6-123** Parameter description

| Parameter | Mandatory | Type                          | Description                                                                  |
|-----------|-----------|-------------------------------|------------------------------------------------------------------------------|
| member    | Yes       | <a href="#">Member</a> object | Specifies the backend server. For details, see <a href="#">Table 6-124</a> . |

**Table 6-124 member** parameter description

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                     |
|----------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name           | No        | String  | Specifies the backend server name. The value contains a maximum of 255 characters.                                                                                                              |
| admin_state_up | No        | Boolean | Specifies the administrative status of the backend server. This parameter is reserved, and the default value is <b>true</b> .                                                                   |
| weight         | No        | Integer | Specifies the backend server weight. The value ranges from <b>0</b> to <b>100</b> . If the value is <b>0</b> , the backend server will not accept new requests. The default value is <b>1</b> . |

## Response

**Table 6-125** Parameter description

| Parameter | Type                 | Description                                                                  |
|-----------|----------------------|------------------------------------------------------------------------------|
| member    | <b>Member</b> object | Specifies the backend server. For details, see <a href="#">Table 6-126</a> . |

**Table 6-126 member** parameter description

| Parameter     | Type    | Description                                                                                                                                                                                                                                                                        |
|---------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id            | String  | Specifies the backend server ID.<br><b>NOTE</b><br>The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.                                                                             |
| tenant_id     | String  | Specifies the ID of the project where the backend server is used.<br>The value contains a maximum of 255 characters.                                                                                                                                                               |
| project_id    | String  | Specifies the ID of the project to which the backend server belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                     |
| name          | String  | Specifies the backend server name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                              |
| address       | String  | Specifies the private IP address of the backend server. This IP address must be in the subnet specified by <b>subnet_id</b> .<br>This parameter can be set only to the IP address of the primary NIC, for example, 192.168.3.11.<br>The value contains a maximum of 64 characters. |
| protocol_port | Integer | Specifies the port used by the backend server. The port number ranges from 1 to 65535.                                                                                                                                                                                             |
| subnet_id     | String  | Specifies the ID of the subnet where the backend server resides. The private IP address of the backend server is in this subnet.<br>IPv6 subnets are not supported.                                                                                                                |

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up   | Boolean | Specifies the administrative status of the backend server.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                         |
| weight           | Integer | Specifies the backend server weight. The value ranges from <b>0</b> to <b>100</b> .<br>If the value is <b>0</b> , the backend server will not accept new requests. The default value is <b>1</b> .                                                                                                                                                                                                                                       |
| operating_status | String  | Specifies the health check result of the backend server. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>ONLINE</b>: The backend server is running normally.</li><li>• <b>NO_MONITOR</b>: No health check is configured for the backend server group that the backend server belongs to.</li><li>• <b>OFFLINE</b>: The cloud server used as the backend server is stopped or does not exist.</li></ul> |

## Example Request

- Example request: Updating the name and weight of a backend server  
PUT https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members/c0042496-e220-44f6-914b-e6ca33bab503  

```
{
 "member": {
 "name": "member create test",
 "weight": 10
 }
}
```

## Example Response

- Example response  

```
{
 "member": {
 "name": "member-jy-tt-1",
 "weight": 1,
 "admin_state_up": true,
 "subnet_id": "33d8b01a-bbe6-41f4-bc45-78a1d284d503",
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "address": "192.168.44.11",
 "protocol_port": 88,
 "operating_status": "ONLINE",
 }
}
```



```
"id": "c0042496-e220-44f6-914b-e6ca33bab503"
}
```

## Status Code

For details, see [Status Codes](#).

## 6.4.5 Removing a Backend Server

### Function

This API is used to remove a backend server by its ID.

### Constraints

After you remove a backend server, new connections to this server will not be established. However, long connections that have been established will be maintained.

### URI

DELETE /v2/{project\_id}/elb/pools/{pool\_id}/members/{member\_id}

**Table 6-127** Parameter description

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                |
|------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id | Yes       | String | Specifies the project ID.                                                                                                                                                                                                                                                                                                                                                  |
| pool_id    | Yes       | String | Specifies the ID of the backend server group.                                                                                                                                                                                                                                                                                                                              |
| member_id  | Yes       | String | Specifies the backend server ID.<br><b>NOTE</b> <ul style="list-style-type: none"><li>The value of this parameter is not the ID of the server. It is an ID automatically generated for the backend server that is associated with the load balancer.</li><li>You can obtain this value by calling the API described in <a href="#">Querying Backend Servers</a>.</li></ul> |

### Request

None

### Response

None

## Example Request

- Example request: Removing a backend server  
DELETE https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members/cf024846-7516-4e3a-b0fb-6590322c836f

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

# 6.5 Health Check

## 6.5.1 Configuring a Health Check

### Function

This API is used to configure a health check for a backend server group to check the status of backend servers. If the health check result is **OFFLINE**, backend servers are considered unhealthy. You need to check the server configuration.

### Constraints

- The security groups must have rules that allow access by 100.125.0.0/16.
- If UDP is used for the health check, the protocol of the backend server group must be UDP.

### URI

POST /v2/{project\_id}/elb/healthmonitors

**Table 6-128** Parameter description

| Parameter  | Mandatory | Type   | Description               |
|------------|-----------|--------|---------------------------|
| project_id | Yes       | String | Specifies the project ID. |

## Request

**Table 6-129** Parameter description

| Parameter     | Mandatory | Type                 | Description                                                                |
|---------------|-----------|----------------------|----------------------------------------------------------------------------|
| healthmonitor | Yes       | Healthmonitor object | Specifies the health check. For details, see <a href="#">Table 6-130</a> . |

**Table 6-130** healthmonitor parameter description

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                   |
|----------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id      | No        | String  | Specifies the ID of the project where the health check is performed.<br><br>The value must be the same as the value of <b>project_id</b> in the token.<br><br>The value contains a maximum of 255 characters. |
| name           | No        | String  | Specifies the health check name.<br><br>The value contains a maximum of 255 characters.                                                                                                                       |
| delay          | Yes       | Integer | Specifies the maximum time between health checks in the unit of second. The value ranges from <b>1</b> to <b>50</b> .                                                                                         |
| max_retries    | Yes       | Integer | Specifies the maximum number of retries. The value ranges from <b>1</b> to <b>10</b> .                                                                                                                        |
| pool_id        | Yes       | String  | Specifies the ID of the backend server group.<br><br>Only one health check can be configured for each backend server group.                                                                                   |
| admin_state_up | No        | Boolean | Specifies the administrative status of the health check.<br><br>This parameter is reserved, and the default value is <b>true</b> .                                                                            |

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| timeout      | Yes       | Integer | <p>Specifies the health check timeout duration in the unit of second. The value ranges from <b>1</b> to <b>50</b>.</p> <p><b>NOTE</b><br/>You are advised to set the value less than that of parameter <b>delay</b>.</p>                                                                                                                                                                                                                                                                                                                     |
| type         | Yes       | String  | <p>Specifies the health check protocol.</p> <p>The value can be <b>TCP</b>, <b>UDP_CONNECT</b>, or <b>HTTP</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                          |
| monitor_port | No        | Integer | <p>Specifies the health check port. The port number ranges from 1 to 65535.</p> <p>The value is left blank by default, indicating that the port of the backend server is used as the health check port.</p>                                                                                                                                                                                                                                                                                                                                  |
| domain_name  | No        | String  | <p>Specifies the domain name of HTTP requests during the health check.</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example, www.test.com.</p> <p>The value contains a maximum of 100 characters.</p> |

| Parameter      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| url_path       | No        | String | <p>Specifies the HTTP request path for the health check. The default value is <code>/</code>.</p> <p>The value starts with a slash (<code>/</code>).</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>An example value is <code>/test</code>.</p> <p>The value contains a maximum of 80 characters.</p>                                                                        |
| expected_codes | No        | String | <p>Specifies the expected HTTP status code. The following options are available:</p> <p>A single value, such as <b>200</b></p> <p>A list of values, such as <b>200,202</b></p> <p>A value range, such as <b>200–204</b></p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>The value contains a maximum of 64 characters.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p> |
| http_method    | No        | String | <p>Specifies the HTTP request method. The default value is <b>GET</b>.</p> <p>The value can be <b>GET</b>, <b>HEAD</b>, <b>POST</b>, <b>PUT</b>, <b>DELETE</b>, <b>TRACE</b>, <b>OPTIONS</b>, <b>CONNECT</b>, or <b>PATCH</b>.</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p>                                                |

## Response

**Table 6-131** Parameter description

| Parameter     | Type                                  | Description                                                                |
|---------------|---------------------------------------|----------------------------------------------------------------------------|
| healthmonitor | <a href="#">Healthmonit</a> or object | Specifies the health check. For details, see <a href="#">Table 6-132</a> . |

**Table 6-132** healthmonitor parameter description

| Parameter        | Type                                   | Description                                                                                                                                                                                                                                    |
|------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id               | String                                 | Specifies the health check ID.                                                                                                                                                                                                                 |
| tenant_id        | String                                 | Specifies the ID of the project where the health check is performed.                                                                                                                                                                           |
| project_id       | String                                 | Specifies the ID of the project to which the health check belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                   |
| name             | String                                 | Specifies the health check name.                                                                                                                                                                                                               |
| delay            | Integer                                | Specifies the maximum time between health checks in the unit of second. The value ranges from <b>1</b> to <b>50</b> .                                                                                                                          |
| max_retries      | Integer                                | Specifies the maximum number of retries. The value ranges from <b>1</b> to <b>10</b> .                                                                                                                                                         |
| max_retries_down | Integer                                | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> . The value ranges from <b>1</b> to <b>10</b> .                                                |
| pools            | Array of <a href="#">Pools</a> objects | Lists the IDs of backend server groups associated with the health check. For details, see <a href="#">Table 6-133</a> .                                                                                                                        |
| admin_state_up   | Boolean                                | Specifies the administrative status of the health check.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul> |
| timeout          | Integer                                | Specifies the health check timeout duration in the unit of second. The value ranges from <b>1</b> to <b>50</b> .<br><b>NOTE</b><br>You are advised to set the value less than that of parameter <b>delay</b> .                                 |

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type           | String  | Specifies the health check protocol.<br>The value can be <b>TCP</b> , <b>UDP_CONNECT</b> , or <b>HTTP</b> .                                                                                                                                                                                                                                                                                                                                                         |
| monitor_port   | Integer | Specifies the health check port. The port number ranges from 1 to 65535.<br>The value is left blank by default, indicating that the port of the backend server is used as the health check port.                                                                                                                                                                                                                                                                    |
| expected_codes | String  | Specifies the expected HTTP status code. The following options are available:<br>A single value, such as <b>200</b><br>A list of values, such as <b>200,202</b><br>A value range, such as <b>200-204</b><br>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b> .<br>Currently, this parameter is not supported and is fixed at <b>200</b> .                                                                                       |
| domain_name    | String  | Specifies the domain name of HTTP requests during the health check.<br>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b> .<br>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.<br>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example: www.test.com. |
| url_path       | String  | Specifies the HTTP request path for the health check. The default value is /.<br>The value starts with a slash (/).<br>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b> .<br>An example value is <b>/test</b> .                                                                                                                                                                                                                 |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| http_method | String | <p>Specifies the HTTP request method. The default value is <b>GET</b>.</p> <p>The value can be <b>GET</b>, <b>HEAD</b>, <b>POST</b>, <b>PUT</b>, <b>DELETE</b>, <b>TRACE</b>, <b>OPTIONS</b>, <b>CONNECT</b>, or <b>PATCH</b>.</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p> |

Table 6-133 pools parameter description

| Parameter | Mandatory | Type   | Description                                   |
|-----------|-----------|--------|-----------------------------------------------|
| id        | Yes       | String | Specifies the ID of the backend server group. |

## Example Request

- Example request: Configuring a health check  
POST https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/healthmonitors  

```
{
 "healthmonitor": {
 "admin_state_up": true,
 "pool_id": "bb44bffb-05d9-412c-9d9c-b189d9e14193",
 "domain_name": "www.test.com",
 "delay": 10,
 "max_retries": 10,
 "timeout": 10,
 "type": "HTTP"
 }
}
```

## Example Response

- Example response 1  

```
{
 "healthmonitor": {
 "name": "",
 "admin_state_up": true,
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "domain_name": "www.test.com",
 "delay": 10,
 "expected_codes": "200",
 "max_retries": 10,
 "http_method": "GET",
 "timeout": 10,
 "pools": [
 {
 "id": "bb44bffb-05d9-412c-9d9c-b189d9e14193"
 }
],
 },
}
```



```
"url_path": "/",
"type": "HTTP",
"id": "2dca3867-98c5-4cde-8f2c-b89ae6bd7e36",
"monitor_port": 112
}
```

### Status Code

For details, see [Status Codes](#).

## 6.5.2 Querying Health Checks

### Function

This API is used to query all the health checks. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

### URI

GET /v2/{project\_id}/elb/healthmonitors

Table 6-134 Path parameters

| Parameter  | Mandatory | Type   | Description               |
|------------|-----------|--------|---------------------------|
| project_id | Yes       | String | Specifies the project ID. |

Table 6-135 Query parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                         |
|-----------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker    | No        | String  | Specifies the ID of the health check from which pagination query starts, that is, the ID of the last health check on the previous page.<br>This parameter must be used together with <b>limit</b> . |
| limit     | No        | Integer | Specifies the number of health checks on each page. If this parameter is not set, all health checks are queried by default.                                                                         |

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse   | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br><br>This parameter must be used together with <b>limit</b> . |
| id             | No        | String  | Specifies the health check ID.                                                                                                                                                                                                                                                                                                                                                                                                    |
| tenant_id      | No        | String  | Specifies the ID of the project where the health check is performed.<br><br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                       |
| project_id     | No        | String  | Specifies the ID of the project to which the health check belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                      |
| name           | No        | String  | Specifies the health check name.<br><br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                           |
| delay          | No        | Integer | Specifies the maximum time between health checks in the unit of second. The value ranges from <b>1</b> to <b>50</b> .                                                                                                                                                                                                                                                                                                             |
| max_retries    | No        | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> . The value ranges from <b>1</b> to <b>10</b> .                                                                                                                                                                                                                                   |
| admin_state_up | No        | Boolean | Specifies the administrative status of the health check.<br><br>The value can be <b>true</b> or <b>false</b> . The default value is <b>true</b> . <ul style="list-style-type: none"><li>• <b>true</b>: indicates that the health check function is enabled.</li><li>• <b>false</b>: indicates that the health check function is disabled.</li></ul>                                                                               |

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| timeout        | No        | Integer | <p>Specifies the health check timeout duration in the unit of second. The value ranges from <b>1</b> to <b>50</b>.</p> <p><b>NOTE</b><br/>You are advised to set the value less than that of parameter <b>delay</b>.</p>                                                                                                                                                                                                                                                                                                                     |
| type           | No        | String  | <p>Specifies the health check protocol. The value can be <b>TCP</b>, <b>UDP_CONNECT</b>, or <b>HTTP</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| monitor_port   | No        | Integer | <p>Specifies the port used for the health check.</p> <p>The value is left blank by default, indicating that the port of the backend server is used as the health check port.</p>                                                                                                                                                                                                                                                                                                                                                             |
| expected_codes | No        | String  | <p>Specifies the expected HTTP status code. The following options are available:</p> <p>A single value, such as <b>200</b></p> <p>A list of values, such as <b>200,202</b></p> <p>A value range, such as <b>200-204</b></p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>The value contains a maximum of 64 characters.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p>                                                                                                            |
| domain_name    | No        | String  | <p>Specifies the domain name of HTTP requests during the health check.</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example: www.test.com.</p> <p>The value contains a maximum of 100 characters.</p> |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| url_path    | No        | String | <p>Specifies the HTTP request path for the health check. The default value is <code>/</code>.</p> <p>The value starts with a slash (<code>/</code>).</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>An example value is <code>/test</code>.</p> <p>The value contains a maximum of 80 characters.</p>                         |
| http_method | No        | String | <p>Specifies the HTTP request method. The default value is <b>GET</b>.</p> <p>The value can be <b>GET</b>, <b>HEAD</b>, <b>POST</b>, <b>PUT</b>, <b>DELETE</b>, <b>TRACE</b>, <b>OPTIONS</b>, <b>CONNECT</b>, or <b>PATCH</b>.</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p> |

Request

None

Response

Table 6-136 Parameter description

| Parameter      | Type                                   | Description                                                             |
|----------------|----------------------------------------|-------------------------------------------------------------------------|
| healthmonitors | Array of <b>Healthmonitors</b> objects | Lists the health checks. For details, see <a href="#">Table 6-137</a> . |

Table 6-137 healthmonitor parameter description

| Parameter  | Type   | Description                                                                                                                  |
|------------|--------|------------------------------------------------------------------------------------------------------------------------------|
| id         | String | Specifies the health check ID.                                                                                               |
| tenant_id  | String | Specifies the ID of the project where the health check is performed.                                                         |
| project_id | String | Specifies the ID of the project to which the health check belongs. This parameter has the same meaning as <b>tenant_id</b> . |

| Parameter        | Type                                   | Description                                                                                                                                                                                                                                              |
|------------------|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name             | String                                 | Specifies the health check name.                                                                                                                                                                                                                         |
| delay            | Integer                                | Specifies the maximum time between health checks in the unit of second. The value ranges from <b>1</b> to <b>50</b> .                                                                                                                                    |
| max_retries      | Integer                                | Specifies the maximum number of retries. The value ranges from <b>1</b> to <b>10</b> .                                                                                                                                                                   |
| max_retries_down | Integer                                | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> . The value ranges from <b>1</b> to <b>10</b> .                                                          |
| pools            | Array of <a href="#">Pools</a> objects | Lists the IDs of backend server groups associated with the health check. For details, see <a href="#">Table 6-133</a> .                                                                                                                                  |
| admin_state_up   | Boolean                                | <p>Specifies the administrative status of the health check.</p> <p>This parameter is reserved. The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul> |
| timeout          | Integer                                | <p>Specifies the health check timeout duration in the unit of second. The value ranges from <b>1</b> to <b>50</b>.</p> <p><b>NOTE</b><br/>You are advised to set the value less than that of parameter <b>delay</b>.</p>                                 |
| type             | String                                 | <p>Specifies the health check protocol.</p> <p>The value can be <b>TCP</b>, <b>UDP_CONNECT</b>, or <b>HTTP</b>.</p>                                                                                                                                      |
| monitor_port     | Integer                                | <p>Specifies the health check port. The port number ranges from 1 to 65535.</p> <p>The value is left blank by default, indicating that the port of the backend server is used as the health check port.</p>                                              |

| Parameter      | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| expected_codes | String | <p>Specifies the expected HTTP status code. The following options are available:</p> <p>A single value, such as <b>200</b></p> <p>A list of values, such as <b>200,202</b></p> <p>A value range, such as <b>200-204</b></p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>Currently, this parameter is not supported and is fixed at <b>200</b>.</p>                                                                                |
| domain_name    | String | <p>Specifies the domain name of HTTP requests during the health check.</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example: www.test.com.</p> |
| url_path       | String | <p>Specifies the HTTP request path for the health check. The default value is <b>/</b>.</p> <p>The value starts with a slash (/).</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>An example value is <b>/test</b>.</p>                                                                                                                                                                                                           |
| http_method    | String | <p>Specifies the HTTP request method. The default value is <b>GET</b>.</p> <p>The value can be <b>GET</b>, <b>HEAD</b>, <b>POST</b>, <b>PUT</b>, <b>DELETE</b>, <b>TRACE</b>, <b>OPTIONS</b>, <b>CONNECT</b>, or <b>PATCH</b>.</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p>                                                                                                    |

**Table 6-138** pools parameter description

| Parameter | Mandatory | Type   | Description                                   |
|-----------|-----------|--------|-----------------------------------------------|
| id        | Yes       | String | Specifies the ID of the backend server group. |

## Example Request

- Example request 1: Querying all health checks  
GET https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/healthmonitors
- Example request 2: Querying HTTP health checks  
GET https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/healthmonitors?type=HTTP

## Example Response

- Example response 1

```
{
 "healthmonitors": [
 {
 "monitor_port": null,
 "name": "",
 "admin_state_up": true,
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "domain_name": null,
 "delay": 5,
 "expected_codes": "200",
 "max_retries": 3,
 "http_method": "GET",
 "timeout": 10,
 "pools": [
 {
 "id": "caef8316-6b65-4676-8293-cf41fb63cc2a"
 }
],
 "url_path": "/",
 "type": "HTTP",
 "id": "1b587819-d619-49c1-9101-fe72d8b361ef"
 }
]
}
```

- Example response 2

```
{
 "healthmonitors": [
 {
 "monitor_port": null,
 "name": "",
 "admin_state_up": true,
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "domain_name": null,
 "delay": 5,
 "expected_codes": "200",
 "max_retries": 3,
 "http_method": "GET",
 "timeout": 10,
 "pools": [
 {
 "id": "caef8316-6b65-4676-8293-cf41fb63cc2a"
 }
],
 "url_path": "/",
 "type": "HTTP",
 "id": "1b587819-d619-49c1-9101-fe72d8b361ef"
 }
]
}
```

## Status Code

For details, see [Status Codes](#).

## 6.5.3 Querying Health Check Details

### Function

This API is used to query details about a health check.

### URI

GET /v2/{project\_id}/elb/healthmonitors/{healthmonitor\_id}

**Table 6-139** Parameter description

| Parameter        | Mandator<br>y | Type   | Description                    |
|------------------|---------------|--------|--------------------------------|
| project_id       | Yes           | String | Specifies the project ID.      |
| healthmonitor_id | Yes           | String | Specifies the health check ID. |

### Request

None

### Response

**Table 6-140** Parameter description

| Parameter     | Type                                      | Description                                                                |
|---------------|-------------------------------------------|----------------------------------------------------------------------------|
| healthmonitor | <a href="#">Healthmonit<br/>or</a> object | Specifies the health check. For details, see <a href="#">Table 6-141</a> . |

**Table 6-141** healthmonitor parameter description

| Parameter  | Type   | Description                                                                                                                  |
|------------|--------|------------------------------------------------------------------------------------------------------------------------------|
| id         | String | Specifies the health check ID.                                                                                               |
| tenant_id  | String | Specifies the ID of the project where the health check is performed.                                                         |
| project_id | String | Specifies the ID of the project to which the health check belongs. This parameter has the same meaning as <b>tenant_id</b> . |
| name       | String | Specifies the health check name.                                                                                             |



| Parameter        | Type                                   | Description                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| delay            | Integer                                | Specifies the maximum time between health checks in the unit of second. The value ranges from <b>1</b> to <b>50</b> .                                                                                                                                                                                                                                                                                  |
| max_retries      | Integer                                | Specifies the maximum number of retries. The value ranges from <b>1</b> to <b>10</b> .                                                                                                                                                                                                                                                                                                                 |
| max_retries_down | Integer                                | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> . The value ranges from <b>1</b> to <b>10</b> .                                                                                                                                                                                                        |
| pools            | Array of <a href="#">Pools</a> objects | Lists the IDs of backend server groups associated with the health check. For details, see <a href="#">Table 6-133</a> .                                                                                                                                                                                                                                                                                |
| admin_state_up   | Boolean                                | <p>Specifies the administrative status of the health check.</p> <p>This parameter is reserved. The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                               |
| timeout          | Integer                                | <p>Specifies the health check timeout duration in the unit of second. The value ranges from <b>1</b> to <b>50</b>.</p> <p><b>NOTE</b><br/>You are advised to set the value less than that of parameter <b>delay</b>.</p>                                                                                                                                                                               |
| type             | String                                 | <p>Specifies the health check protocol.</p> <p>The value can be <b>TCP</b>, <b>UDP_CONNECT</b>, or <b>HTTP</b>.</p>                                                                                                                                                                                                                                                                                    |
| monitor_port     | Integer                                | <p>Specifies the health check port. The port number ranges from 1 to 65535.</p> <p>The value is left blank by default, indicating that the port of the backend server is used as the health check port.</p>                                                                                                                                                                                            |
| expected_codes   | String                                 | <p>Specifies the expected HTTP status code. The following options are available:</p> <p>A single value, such as <b>200</b></p> <p>A list of values, such as <b>200,202</b></p> <p>A value range, such as <b>200-204</b></p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>Currently, this parameter is not supported and is fixed at <b>200</b>.</p> |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_name | String | <p>Specifies the domain name of HTTP requests during the health check.</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example: www.test.com.</p> |
| url_path    | String | <p>Specifies the HTTP request path for the health check. The default value is <b>/</b>.</p> <p>The value starts with a slash (/).</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>An example value is <b>/test</b>.</p>                                                                                                                                                                                                           |
| http_method | String | <p>Specifies the HTTP request method. The default value is <b>GET</b>.</p> <p>The value can be <b>GET</b>, <b>HEAD</b>, <b>POST</b>, <b>PUT</b>, <b>DELETE</b>, <b>TRACE</b>, <b>OPTIONS</b>, <b>CONNECT</b>, or <b>PATCH</b>.</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p>                                                                                                    |

Table 6-142 pools parameter description

| Parameter | Mandatory | Type   | Description                                   |
|-----------|-----------|--------|-----------------------------------------------|
| id        | Yes       | String | Specifies the ID of the backend server group. |

## Example Request

- Example request: Querying details of a health check  
GET https://{endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/healthmonitors/  
b7633ade-24dc-4d72-8475-06aa22be5412

## Example Response

- Example response 1  
{  
  "healthmonitor": {

```
"name": "",
"admin_state_up": true,
"tenant_id": "145483a5107745e9b3d80f956713e6a3",
"project_id": "145483a5107745e9b3d80f956713e6a3",
"domain_name": null,
"delay": 10,
"expected_codes": "200",
"max_retries": 10,
"http_method": "GET",
"timeout": 10,
"pools": [
 {
 "id": "bb44bffb-05d9-412c-9d9c-b189d9e14193"
 }
],
"url_path": "/",
"type": "HTTP",
"id": "61c24cba-19bb-45c1-a013-7565e5f98872",
"monitor_port": 112
}
```

Status Code

For details, see [Status Codes](#).

6.5.4 Updating a Health Check

Function

This API is used to update a health check.

Constraints

If **provisioning\_status** of the load balancer for which the health check is configured is not **ACTIVE**, the health check cannot be updated.

URI

PUT /v2/{project\_id}/elb/healthmonitors/{healthmonitor\_id}

Table 6-143 Parameter description

| Parameter        | Mandator<br>y | Type   | Description                    |
|------------------|---------------|--------|--------------------------------|
| project_id       | Yes           | String | Specifies the project ID.      |
| healthmonitor_id | Yes           | String | Specifies the health check ID. |

## Request

**Table 6-144** Parameter description

| Parameter     | Mandatory | Type                                 | Description                                                                |
|---------------|-----------|--------------------------------------|----------------------------------------------------------------------------|
| healthmonitor | Yes       | <a href="#">Healthmonitor</a> object | Specifies the health check. For details, see <a href="#">Table 6-145</a> . |

**Table 6-145** healthmonitor parameter description

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                    |
|----------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name           | No        | String  | Specifies the health check name.<br>The value contains a maximum of 255 characters.                                                                                                                            |
| delay          | No        | Integer | Specifies the maximum time between health checks in the unit of second.<br>The value ranges from <b>1</b> to <b>50</b> .                                                                                       |
| max_retries    | No        | Integer | Specifies the maximum number of retries. The value ranges from <b>1</b> to <b>10</b> .                                                                                                                         |
| admin_state_up | No        | Boolean | Specifies the administrative status of the health check.<br>This parameter is reserved, and the default value is <b>true</b> .                                                                                 |
| timeout        | No        | Integer | Specifies the health check timeout duration in the unit of second. The value ranges from <b>1</b> to <b>50</b> .<br><b>NOTE</b><br>You are advised to set the value less than that of parameter <b>delay</b> . |
| type           | No        | String  | Specifies the health check protocol.<br>The value can be <b>TCP</b> , <b>UDP_CONNECT</b> , or <b>HTTP</b> .                                                                                                    |
| monitor_port   | No        | Integer | Specifies the health check port. The port number ranges from 1 to 65535.<br>The value is left blank by default, indicating that the port of the backend server is used as the health check port.               |

| Parameter      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| expected_codes | No        | String | <p>Specifies the expected HTTP status code. The following options are available:</p> <p>A single value, such as <b>200</b></p> <p>A list of values, such as <b>200,202</b></p> <p>A value range, such as <b>200-204</b></p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p>                                                                                                                                                                                                                     |
| domain_name    | No        | String | <p>Specifies the domain name of HTTP requests during the health check.</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example: www.test.com.</p> <p>The value contains a maximum of 100 characters.</p> |
| url_path       | No        | String | <p>Specifies the HTTP request path for the health check. The default value is <b>/</b>.</p> <p>The value starts with a slash (/).</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>An example value is <b>/test</b>.</p> <p>The value contains a maximum of 80 characters.</p>                                                                                                                                                                                                            |
| http_method    | No        | String | <p>Specifies the HTTP request method. The default value is <b>GET</b>.</p> <p>The value can be <b>GET</b>, <b>HEAD</b>, <b>POST</b>, <b>PUT</b>, <b>DELETE</b>, <b>TRACE</b>, <b>OPTIONS</b>, <b>CONNECT</b>, or <b>PATCH</b>.</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p>                                                                                                                                                           |

## Response

**Table 6-146** Parameter description

| Parameter     | Type                                  | Description                                                                |
|---------------|---------------------------------------|----------------------------------------------------------------------------|
| healthmonitor | <a href="#">Healthmonit</a> or object | Specifies the health check. For details, see <a href="#">Table 6-147</a> . |

**Table 6-147** healthmonitor parameter description

| Parameter        | Type                                   | Description                                                                                                                                                                                                                                    |
|------------------|----------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id               | String                                 | Specifies the health check ID.                                                                                                                                                                                                                 |
| tenant_id        | String                                 | Specifies the ID of the project where the health check is performed.                                                                                                                                                                           |
| project_id       | String                                 | Specifies the ID of the project to which the health check belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                   |
| name             | String                                 | Specifies the health check name.                                                                                                                                                                                                               |
| delay            | Integer                                | Specifies the maximum time between health checks in the unit of second. The value ranges from <b>1</b> to <b>50</b> .                                                                                                                          |
| max_retries      | Integer                                | Specifies the maximum number of retries. The value ranges from <b>1</b> to <b>10</b> .                                                                                                                                                         |
| max_retries_down | Integer                                | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> . The value ranges from <b>1</b> to <b>10</b> .                                                |
| pools            | Array of <a href="#">Pools</a> objects | Lists the IDs of backend server groups associated with the health check. For details, see <a href="#">Table 6-133</a> .                                                                                                                        |
| admin_state_up   | Boolean                                | Specifies the administrative status of the health check.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul> |
| timeout          | Integer                                | Specifies the health check timeout duration in the unit of second. The value ranges from <b>1</b> to <b>50</b> .<br><b>NOTE</b><br>You are advised to set the value less than that of parameter <b>delay</b> .                                 |

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type           | String  | Specifies the health check protocol.<br>The value can be <b>TCP</b> , <b>UDP_CONNECT</b> , or <b>HTTP</b> .                                                                                                                                                                                                                                                                                                                                                         |
| monitor_port   | Integer | Specifies the health check port. The port number ranges from 1 to 65535.<br>The value is left blank by default, indicating that the port of the backend server is used as the health check port.                                                                                                                                                                                                                                                                    |
| expected_codes | String  | Specifies the expected HTTP status code. The following options are available:<br>A single value, such as <b>200</b><br>A list of values, such as <b>200,202</b><br>A value range, such as <b>200-204</b><br>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b> .<br>Currently, this parameter is not supported and is fixed at <b>200</b> .                                                                                       |
| domain_name    | String  | Specifies the domain name of HTTP requests during the health check.<br>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b> .<br>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.<br>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example: www.test.com. |
| url_path       | String  | Specifies the HTTP request path for the health check. The default value is /.<br>The value starts with a slash (/).<br>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b> .<br>An example value is <b>/test</b> .                                                                                                                                                                                                                 |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| http_method | String | <p>Specifies the HTTP request method. The default value is <b>GET</b>.</p> <p>The value can be <b>GET</b>, <b>HEAD</b>, <b>POST</b>, <b>PUT</b>, <b>DELETE</b>, <b>TRACE</b>, <b>OPTIONS</b>, <b>CONNECT</b>, or <b>PATCH</b>.</p> <p>This parameter takes effect only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p> |

Table 6-148 pools parameter description

| Parameter | Mandatory | Type   | Description                                   |
|-----------|-----------|--------|-----------------------------------------------|
| id        | Yes       | String | Specifies the ID of the backend server group. |

## Example Request

- Example request: Updating a health check  
PUT https://{endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/healthmonitors/b7633ade-24dc-4d72-8475-06aa22be5412  

```
{
 "healthmonitor": {
 "delay": 15,
 "name": "health-xx",
 "timeout": 12
 }
}
```

## Example Response

- Example response  

```
{
 "healthmonitor": {
 "name": "health-xx",
 "admin_state_up": true,
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "domain_name": null,
 "delay": 15,
 "expected_codes": "200",
 "max_retries": 10,
 "http_method": "GET",
 "timeout": 12,
 "pools": [
 {
 "id": "bb44bffb-05d9-412c-9d9c-b189d9e14193"
 }
],
 "url_path": "/",
 "type": "HTTP",
 "id": "2dca3867-98c5-4cde-8f2c-b89ae6bd7e36",
 }
}
```



```
"monitor_port": 112
}
```

## Status Code

For details, see [Status Codes](#).

## 6.5.5 Deleting a Health Check

### Function

This API is used to delete a health check.

### Constraints

If **provisioning\_status** of the load balancer for which the health check is configured is not **ACTIVE**, the health check cannot be deleted.

### URI

DELETE /v2/{project\_id}/elb/healthmonitors/{healthmonitor\_id}

**Table 6-149** Parameter description

| Parameter        | Mandatory | Type   | Description                    |
|------------------|-----------|--------|--------------------------------|
| project_id       | Yes       | String | Specifies the project ID.      |
| healthmonitor_id | Yes       | String | Specifies the health check ID. |

### Request

None

### Response

None

### Example Request

- Example request: Deleting a health check  
DELETE https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/healthmonitors/b7633ade-24dc-4d72-8475-06aa22be5412

### Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

# 6.6 Forwarding Policy

## 6.6.1 Adding a Forwarding Policy

### Function

This API is used to add a forwarding policy. The listener and forwarding policy determine how traffic is forwarded to backend servers.

- By matching the URL or domain name specified in the forwarding policy when **action** is set to **REDIRECT\_TO\_POOL**, the load balancer distributes the traffic to backend servers in a specific backend server group.
- When **action** is set to **REDIRECT\_TO\_LISTENER**, the HTTP listener is redirected to an HTTPS listener, and requests are routed by the HTTPS listener.

### Constraints

Currently, only redirects from an HTTP listener to an HTTPS listener are supported. When **action** is set to **REDIRECT\_TO\_LISTENER**, the listener specified by **listener\_id** can only be an HTTP listener, and the listener specified by **redirect\_listener\_id** can only be an HTTPS listener.

The load balancer of the HTTPS listener to which traffic is redirected must be the same as that of the HTTP listener.

### URI

POST /v2/{project\_id}/elb/l7policies

**Table 6-150** Parameter description

| Parameter  | Mandatory | Type   | Description               |
|------------|-----------|--------|---------------------------|
| project_id | Yes       | String | Specifies the project ID. |

### Request

**Table 6-151** Parameter description

| Parameter | Mandatory | Type                            | Description                                                                     |
|-----------|-----------|---------------------------------|---------------------------------------------------------------------------------|
| l7policy  | Yes       | <a href="#">L7policy</a> object | Specifies the forwarding policy. For details, see <a href="#">Table 6-152</a> . |

**Table 6-152 l7policy** parameter description

| Parameter      | Man<br>dator<br>y | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------|-------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id      | No                | String  | Specifies the ID of the project where the forwarding policy is used.<br>The value must be the same as the value of <b>project_id</b> in the token.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                |
| name           | No                | String  | Specifies the forwarding policy name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                             |
| admin_state_up | No                | Boolean | Specifies the administrative status of the forwarding policy. The value can only be <b>true</b> .                                                                                                                                                                                                                                                                                                                                                                                    |
| description    | No                | String  | Provides supplementary information about the forwarding policy.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                   |
| listener_id    | Yes               | String  | Specifies the ID of the listener for which the forwarding policy is added. <ul style="list-style-type: none"><li>When <b>action</b> is set to <b>REDIRECT_TO_POOL</b>, forwarding policies can be added to a listener with <b>protocol</b> set to <b>HTTP</b> or <b>TERMINATED_HTTPS</b>.</li><li>When <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, forwarding policies can be added to a listener with <b>protocol</b> set to <b>HTTP</b>.</li></ul>                        |
| action         | Yes               | String  | Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener. The value can be: <ul style="list-style-type: none"><li><b>REDIRECT_TO_POOL</b>: Requests are forwarded to the backend server group specified by <b>redirect_pool_id</b>.</li><li><b>REDIRECT_TO_LISTENER</b>: Requests are redirected from the HTTP listener specified by <b>listener_id</b> to the HTTPS listener specified by <b>redirect_listener_id</b>.</li></ul> |

| Parameter            | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_pool_id     | No        | String  | <p>Specifies the ID of the backend server group to which traffic is forwarded. The default value is <b>null</b>.</p> <p>This parameter is mandatory when <b>action</b> is set to <b>REDIRECT_TO_POOL</b>.</p> <p>This parameter cannot be specified when <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>.</p> <p>The backend server group must meet the following requirements:</p> <ul style="list-style-type: none"><li>• Cannot be the default backend server group of the listener.</li><li>• Cannot be the backend server group used by forwarding policies of other listeners.</li></ul> |
| redirect_listener_id | No        | String  | <p>Specifies the ID of the listener to which the traffic is redirected. The default value is <b>null</b>.</p> <p>This parameter is mandatory when <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>.</p> <p>This parameter cannot be specified when <b>action</b> is set to <b>REDIRECT_TO_POOL</b>. The listener must meet the following requirements:</p> <ul style="list-style-type: none"><li>• Can only be an HTTPS listener.</li><li>• Can only be a listener of the same load balancer.</li></ul>                                                                                         |
| redirect_url         | No        | String  | <p>Specifies the URL to which traffic is redirected. The default value is <b>null</b>.</p> <p>This parameter is reserved.</p> <p>The value contains a maximum of 255 characters.</p>                                                                                                                                                                                                                                                                                                                                                                                                               |
| position             | No        | Integer | <p>Specifies the forwarding priority. The value ranges from <b>1</b> to <b>100</b>. The default value is <b>100</b>.</p> <p>This parameter is reserved.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Parameter | Mandatory | Type                                   | Description                                                                                                                                                                                                           |
|-----------|-----------|----------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rules     | No        | Array of <a href="#">Rules</a> objects | <p>Lists the forwarding rules of the forwarding policy. For details, see <a href="#">Table 6-153</a>.</p> <p>The list contains a maximum of two rules, and the <b>type</b> parameter of each rule must be unique.</p> |

**Table 6-153** rules parameter description

| Parameter      | Type    | Mandatory | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|---------|-----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | No        | Specifies the administrative status of the forwarding rule. The value can only be <b>true</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| type           | String  | Yes       | <p>Specifies the match type of a forwarding rule.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>● <b>HOST_NAME</b>: matches the domain name in the request.</li><li>● <b>PATH</b>: matches the path in the request.</li></ul> <p>The match type of forwarding rules in a forwarding policy must be unique.</p>                                                                                                                                                                                                                                                   |
| compare_type   | String  | Yes       | <p>Specifies the match mode. The options are as follows:</p> <p>When <b>type</b> is set to <b>HOST_NAME</b>, the value of this parameter can only be the following:</p> <ul style="list-style-type: none"><li>● <b>EQUAL_TO</b>: indicates exact match.</li></ul> <p>When <b>type</b> is set to <b>PATH</b>, the value of this parameter can be one of the following:</p> <ul style="list-style-type: none"><li>● <b>REGEX</b>: indicates regular expression match.</li><li>● <b>STARTS_WITH</b>: indicates prefix match.</li><li>● <b>EQUAL_TO</b>: indicates exact match.</li></ul> |

| Parameter | Type    | Mandatory | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-----------|---------|-----------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| invert    | Boolean | No        | Specifies whether reverse matching is supported.<br>The value can be <b>true</b> or <b>false</b> . The default value is <b>false</b> .<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| key       | String  | No        | Specifies the key of the match content. The default value is <b>null</b> .<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| value     | String  | Yes       | Specifies the value of the match content. The value cannot contain spaces. <ul style="list-style-type: none"><li>When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~!;@^-%#&amp;\$.*+?,=!:  \()[]{}</code></li></ul> |

## Response

**Table 6-154** Parameter description

| Parameter | Type                   | Description                                                                     |
|-----------|------------------------|---------------------------------------------------------------------------------|
| l7policy  | <b>L7policy</b> object | Specifies the forwarding policy. For details, see <a href="#">Table 6-155</a> . |

**Table 6-155** l7policy parameter description

| Parameter | Type   | Description                         |
|-----------|--------|-------------------------------------|
| id        | String | Specifies the forwarding policy ID. |

| Parameter            | Type                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id            | String                        | Specifies the ID of the project where the forwarding policy is used.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| project_id           | String                        | Specifies the ID of the project to which the forwarding policy belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                                                                                      |
| name                 | String                        | Specifies the forwarding policy name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| admin_state_up       | Boolean                       | Specifies the administrative status of the forwarding policy. The value can only be <b>true</b> .                                                                                                                                                                                                                                                                                                                                                                                                      |
| description          | String                        | Provides supplementary information about the forwarding policy.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| listener_id          | String                        | Specifies the ID of the listener to which the forwarding policy is added.                                                                                                                                                                                                                                                                                                                                                                                                                              |
| action               | String                        | <p>Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL</b>: Requests are forwarded to the backend server group specified by <b>redirect_pool_id</b>.</li><li>• <b>REDIRECT_TO_LISTENER</b>: Requests are redirected from the HTTP listener specified by <b>listener_id</b> to the HTTPS listener specified by <b>redirect_listener_id</b>.</li></ul> |
| redirect_pool_id     | String                        | Specifies the ID of the backend server group to which traffic is forwarded.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| redirect_listener_id | String                        | Specifies the ID of the listener to which the traffic is redirected.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| redirect_url         | String                        | Specifies the URL to which traffic is redirected. This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                                          |
| rules                | Array of <b>Rules</b> objects | Lists the forwarding rules of the forwarding policy. For details, see <a href="#">Table 6-156</a> .                                                                                                                                                                                                                                                                                                                                                                                                    |
| position             | Integer                       | <p>Specifies the forwarding priority. The value ranges from <b>1</b> to <b>100</b>. The default value is <b>100</b>.</p> <p>This parameter is reserved.</p>                                                                                                                                                                                                                                                                                                                                            |
| provisioning_status  | String                        | <p>This parameter is reserved, and its value can only be <b>ACTIVE</b>.</p> <p>It specifies the provisioning status of the forwarding policy.</p>                                                                                                                                                                                                                                                                                                                                                      |

**Table 6-156** rules parameter description

| Parameter | Type   | Description                                         |
|-----------|--------|-----------------------------------------------------|
| id        | String | Specifies the ID of the associated forwarding rule. |

## Example Request

- Example request 1: Adding a forwarding policy  
POST https://{Endpoint}/v2/573d73c9f90e48d0bddfa0eb202b25c2/elb/l7policies

```
{
 "l7policy": {
 "name": "niubiao_yaqing_api-2",
 "listener_id": "3e24a3ca-11e5-4aa3-abd4-61ba0a8a18f1",
 "action": "REDIRECT_TO_POOL",
 "redirect_pool_id": "6460f13a-76de-43c7-b776-4fefc06a676e",
 "rules": [
 {
 "type": "PATH",
 "compare_type": "EQUAL_TO",
 "value": "/test"
 },
 {
 "type": "HOST_NAME",
 "compare_type": "EQUAL_TO",
 "value": "www.test.com"
 }
]
 }
}
```

## Example Response

- Example response 1  

```
{
 "l7policy": {
 "redirect_pool_id": "6460f13a-76de-43c7-b776-4fefc06a676e",
 "description": "",
 "admin_state_up": true,
 "rules": [
 {
 "id": "742600d9-2a14-4808-af69-336883dbb590"
 },
 {
 "id": "3251ed77-0d52-412b-9310-733636bb3fbf"
 }
],
 "tenant_id": "573d73c9f90e48d0bddfa0eb202b25c2",
 "listener_id": "3e24a3ca-11e5-4aa3-abd4-61ba0a8a18f1",
 "redirect_url": null,
 "redirect_listener_id": null,
 "action": "REDIRECT_TO_POOL",
 "position": 100,
 "provisioning_status": "ACTIVE",
 "project_id": "573d73c9f90e48d0bddfa0eb202b25c2",
 "id": "65d6e115-f179-4bcd-9bbb-1484e5f8ee81",
 "name": "niubiao_yaqing-_api-2"
 }
}
```



## Status Code

For details, see [Status Codes](#).

## 6.6.2 Querying Forwarding Policies

### Function

This API is used to query all the forwarding policies. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

### URI

GET /v2/{project\_id}/elb/l7policies

**Table 6-157** Path parameters

| Parameter  | Mandatory | Type   | Description               |
|------------|-----------|--------|---------------------------|
| project_id | Yes       | String | Specifies the project ID. |

**Table 6-158** Query parameters

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker       | No        | String  | Specifies the ID of the forwarding policy from which pagination query starts, that is, the ID of the last forwarding policy on the previous page.<br><br>This parameter must be used together with <b>limit</b> .                                                                                                                                                                                                                 |
| limit        | No        | Integer | Specifies the number of forwarding policies on each page. If this parameter is not set, all forwarding policies are queried by default.                                                                                                                                                                                                                                                                                           |
| page_reverse | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br><br>This parameter must be used together with <b>limit</b> . |

| Parameter            | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                   | No        | String  | Specifies the forwarding policy ID.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| tenant_id            | No        | String  | Specifies the ID of the project where the forwarding policy is used.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                     |
| project_id           | No        | String  | Specifies the ID of the project to which the forwarding policy belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                                                                           |
| name                 | No        | String  | Specifies the forwarding policy name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                    |
| admin_state_up       | No        | Boolean | Specifies the administrative status of the forwarding policy.                                                                                                                                                                                                                                                                                                                                                                                                                               |
| description          | No        | String  | Provides supplementary information about the forwarding policy.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                          |
| listener_id          | No        | String  | Specifies the ID of the listener to which the forwarding policy is added.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| action               | No        | String  | Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener.<br>The value can be: <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL</b>: Requests are forwarded to the backend server group specified by <b>redirect_pool_id</b>.</li><li>• <b>REDIRECT_TO_LISTENER</b>: Requests are redirected from the HTTP listener specified by <b>listener_id</b> to the HTTPS listener specified by <b>redirect_listener_id</b>.</li></ul> |
| redirect_pool_id     | No        | String  | Specifies the ID of the backend server group to which traffic is forwarded.                                                                                                                                                                                                                                                                                                                                                                                                                 |
| redirect_listener_id | No        | String  | Specifies the ID of the listener to which the traffic is redirected.                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Parameter             | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_url          | No        | String  | Specifies the URL to which traffic is redirected.<br>This parameter is reserved.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| position              | No        | Integer | Specifies the forwarding priority.<br>The value ranges from <b>1</b> to <b>100</b> .<br>The default value is <b>100</b> .<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| provisioning_status   | No        | String  | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the forwarding policy.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| enterprise_project_id | No        | String  | Specifies the enterprise project ID. Enterprise projects are used for fine-grained authentication. <ul style="list-style-type: none"><li>• If <b>listener_id</b> is passed, the ID of the enterprise project to which the load balancer belongs is used for authentication.</li><li>• If <b>listener_id</b> is not passed, the ID of the enterprise project to which the forwarding policy belongs is used for authentication.</li><li>• If neither <b>listener_id</b> nor <b>enterprise_project_id</b> is passed, fine-grained authentication is performed. The <b>elb:loadbalancers:list</b> permissions must be assigned to the user group.</li></ul> |

## Request

None

## Response

**Table 6-159** Response parameters

| Parameter  | Type                                        | Description                                                                   |
|------------|---------------------------------------------|-------------------------------------------------------------------------------|
| l7policies | Array of <a href="#">L7policies</a> objects | Lists the forwarding policies. For details, see <a href="#">Table 6-160</a> . |

**Table 6-160** l7policy parameter description

| Parameter            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                   | String  | Specifies the forwarding policy ID.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| tenant_id            | String  | Specifies the ID of the project where the forwarding policy is used.                                                                                                                                                                                                                                                                                                                                                                                                                        |
| project_id           | String  | Specifies the ID of the project to which the forwarding policy belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                                                                           |
| name                 | String  | Specifies the forwarding policy name.                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| admin_state_up       | Boolean | Specifies the administrative status of the forwarding policy. The value can only be <b>true</b> .                                                                                                                                                                                                                                                                                                                                                                                           |
| description          | String  | Provides supplementary information about the forwarding policy.                                                                                                                                                                                                                                                                                                                                                                                                                             |
| listener_id          | String  | Specifies the ID of the listener to which the forwarding policy is added.                                                                                                                                                                                                                                                                                                                                                                                                                   |
| action               | String  | Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener.<br>The value can be: <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL</b>: Requests are forwarded to the backend server group specified by <b>redirect_pool_id</b>.</li><li>• <b>REDIRECT_TO_LISTENER</b>: Requests are redirected from the HTTP listener specified by <b>listener_id</b> to the HTTPS listener specified by <b>redirect_listener_id</b>.</li></ul> |
| redirect_pool_id     | String  | Specifies the ID of the backend server group to which traffic is forwarded.                                                                                                                                                                                                                                                                                                                                                                                                                 |
| redirect_listener_id | String  | Specifies the ID of the listener to which the traffic is redirected.                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Parameter           | Type                                   | Description                                                                                                                                     |
|---------------------|----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_url        | String                                 | Specifies the URL to which traffic is redirected. This parameter is reserved.                                                                   |
| rules               | Array of <a href="#">Rules</a> objects | Lists the forwarding rules of the forwarding policy. For details, see <a href="#">Table 6-156</a> .                                             |
| position            | Integer                                | Specifies the forwarding priority. The value ranges from <b>1</b> to <b>100</b> . The default value is <b>100</b> . This parameter is reserved. |
| provisioning_status | String                                 | This parameter is reserved, and its value can only be <b>ACTIVE</b> . It specifies the provisioning status of the forwarding policy.            |

**Table 6-161** rules parameter description

| Parameter | Type   | Description                                         |
|-----------|--------|-----------------------------------------------------|
| id        | String | Specifies the ID of the associated forwarding rule. |

## Example Request

- Example request 1: Querying all forwarding policies  
GET https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies
- Example request 2: Querying forwarding policies through which requests are forwarded to the backend server group  
GET https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies?action=REDIRECT\_TO\_POOL

## Example Response

- Example response 1

```
{
 "l7policies": [
 {
 "redirect_pool_id": "431a03eb-81bb-408e-ae37-7ce19023692b",
 "redirect_listener_id": null,
 "description": "",
 "admin_state_up": true,
 "rules": [
 {
 "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
 },
 {
 "id": "f02b3bca-69d2-4335-a3fa-a8054e996213"
 }
],
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 }
]
}
```

```
 "listener_id": "26058b64-6185-4e06-874e-4bd68b7633d0",
 "redirect_url": null,
 "action": "REDIRECT_TO_POOL",
 "position": 2,
 "provisioning_status": "ACTIVE",
 "id": "5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586",
 "name": ""
 },
 {
 "redirect_pool_id": "59eebd7b-c68f-4f8a-aa7f-e062e84c0690",
 "redirect_listener_id": null,
 "description": "",
 "admin_state_up": true,
 "rules": [
 {
 "id": "f4499f48-de3d-4efe-926d-926aa4d6aaf5"
 }
],
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "listener_id": "e1310063-00de-4867-ab55-ccac4d9db364",
 "redirect_url": null,
 "action": "REDIRECT_TO_POOL",
 "position": 1,
 "provisioning_status": "ACTIVE",
 "id": "6cfd9d89-1d7e-4d84-ae1f-a8c5ff126f72",
 "name": ""
 }
]
}
```

- Example response 2

```
{
 "l7policies": [
 {
 "redirect_pool_id": "431a03eb-81bb-408e-ae37-7ce19023692b",
 "redirect_listener_id": null,
 "description": "",
 "admin_state_up": true,
 "rules": [
 {
 "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
 },
 {
 "id": "f02b3bca-69d2-4335-a3fa-a8054e996213"
 }
],
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "listener_id": "26058b64-6185-4e06-874e-4bd68b7633d0",
 "redirect_url": null,
 "action": "REDIRECT_TO_POOL",
 "position": 2,
 "provisioning_status": "ACTIVE",
 "id": "5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586",
 "name": ""
 },
 {
 "redirect_pool_id": "59eebd7b-c68f-4f8a-aa7f-e062e84c0690",
 "redirect_listener_id": null,
 "description": "",
 "admin_state_up": true,
 "rules": [
 {
 "id": "f4499f48-de3d-4efe-926d-926aa4d6aaf5"
 }
],
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "listener_id": "e1310063-00de-4867-ab55-ccac4d9db364",

```

```
{
 "redirect_url": null,
 "action": "REDIRECT_TO_POOL",
 "position": 1,
 "provisioning_status": "ACTIVE",
 "id": "6cfd9d89-1d7e-4d84-ae1f-a8c5ff126f72",
 "name": ""
}
```

## Status Code

For details, see [Status Codes](#).

## 6.6.3 Querying Details of a Forwarding Policy

### Function

This API is used to query details about a forwarding policy.

### URI

GET /v2/{project\_id}/elb/l7policies/{l7policy\_id}

**Table 6-162** Parameter description

| Parameter   | Mandatory | Type   | Description                         |
|-------------|-----------|--------|-------------------------------------|
| project_id  | Yes       | String | Specifies the project ID.           |
| l7policy_id | Yes       | String | Specifies the forwarding policy ID. |

### Request

None

### Response

**Table 6-163** Parameter description

| Parameter | Type                            | Description                                                                     |
|-----------|---------------------------------|---------------------------------------------------------------------------------|
| l7policy  | <a href="#">L7policy</a> object | Specifies the forwarding policy. For details, see <a href="#">Table 6-164</a> . |

**Table 6-164 l7policy** parameter description

| Parameter            | Type                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                   | String                        | Specifies the forwarding policy ID.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tenant_id            | String                        | Specifies the ID of the project where the forwarding policy is used.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| project_id           | String                        | Specifies the ID of the project to which the forwarding policy belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                                                                                      |
| name                 | String                        | Specifies the forwarding policy name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| admin_state_up       | Boolean                       | Specifies the administrative status of the forwarding policy. The value can only be <b>true</b> .                                                                                                                                                                                                                                                                                                                                                                                                      |
| description          | String                        | Provides supplementary information about the forwarding policy.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| listener_id          | String                        | Specifies the ID of the listener to which the forwarding policy is added.                                                                                                                                                                                                                                                                                                                                                                                                                              |
| action               | String                        | <p>Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL</b>: Requests are forwarded to the backend server group specified by <b>redirect_pool_id</b>.</li><li>• <b>REDIRECT_TO_LISTENER</b>: Requests are redirected from the HTTP listener specified by <b>listener_id</b> to the HTTPS listener specified by <b>redirect_listener_id</b>.</li></ul> |
| redirect_pool_id     | String                        | Specifies the ID of the backend server group to which traffic is forwarded.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| redirect_listener_id | String                        | Specifies the ID of the listener to which the traffic is redirected.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| redirect_url         | String                        | Specifies the URL to which traffic is redirected. This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                                          |
| rules                | Array of <b>Rules</b> objects | Lists the forwarding rules of the forwarding policy. For details, see <a href="#">Table 6-156</a> .                                                                                                                                                                                                                                                                                                                                                                                                    |
| position             | Integer                       | <p>Specifies the forwarding priority. The value ranges from <b>1</b> to <b>100</b>. The default value is <b>100</b>.</p> <p>This parameter is reserved.</p>                                                                                                                                                                                                                                                                                                                                            |



| Parameter           | Type   | Description                                                                                                                             |
|---------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | String | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the forwarding policy. |

**Table 6-165** rules parameter description

| Parameter | Type   | Description                                         |
|-----------|--------|-----------------------------------------------------|
| id        | String | Specifies the ID of the associated forwarding rule. |

## Example Request

- Example request: Querying details of a forwarding policy  
GET https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586

## Example Response

- Example response 1

```
{
 "l7policy": {
 "redirect_pool_id": "431a03eb-81bb-408e-ae37-7ce19023692b",
 "redirect_listener_id": null,
 "description": "",
 "admin_state_up": true,
 "rules": [
 {
 "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
 },
 {
 "id": "f02b3bca-69d2-4335-a3fa-a8054e996213"
 }
],
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "listener_id": "26058b64-6185-4e06-874e-4bd68b7633d0",
 "redirect_url": null,
 "provisioning_status": "ACTIVE",
 "action": "REDIRECT_TO_POOL",
 "position": 1,
 "id": "5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586",
 "name": "l7policy-garry-1"
 }
}
```

## Status Code

For details, see [Status Codes](#).

## 6.6.4 Updating a Forwarding Policy

### Function

This API is used to update a forwarding policy.

### URI

PUT /v2/{project\_id}/elb/l7policies/{l7policy\_id}

**Table 6-166** Parameter description

| Parameter   | Mandatory | Type   | Description                         |
|-------------|-----------|--------|-------------------------------------|
| project_id  | Yes       | String | Specifies the project ID.           |
| l7policy_id | Yes       | String | Specifies the forwarding policy ID. |

### Request

**Table 6-167** Parameter description

| Parameter | Mandatory | Type                   | Description                                                                     |
|-----------|-----------|------------------------|---------------------------------------------------------------------------------|
| l7policy  | Yes       | <b>L7policy</b> object | Specifies the forwarding policy. For details, see <a href="#">Table 6-168</a> . |

**Table 6-168** l7policy parameter description

| Parameter   | Mandatory | Type   | Description                                                                                                        |
|-------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------|
| name        | No        | String | Specifies the forwarding policy name.<br>The value contains a maximum of 255 characters.                           |
| description | No        | String | Provides supplementary information about the forwarding policy.<br>The value contains a maximum of 255 characters. |

| Parameter            | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_pool_id     | No        | String  | <p>Specifies the ID of the backend server group to which traffic is forwarded. The default value is <b>null</b>.</p> <p>This parameter is mandatory when <b>action</b> is set to <b>REDIRECT_TO_POOL</b>.</p> <p>This parameter cannot be specified when <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>.</p> <p>The backend server group must meet the following requirements:</p> <ul style="list-style-type: none"><li>• Cannot be the default backend server group of the listener.</li><li>• Cannot be the backend server group used by forwarding policies of other listeners.</li></ul> |
| redirect_listener_id | No        | String  | <p>Specifies the ID of the listener to which the traffic is redirected. The default value is <b>null</b>.</p> <p>This parameter is mandatory when <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>.</p> <p>This parameter cannot be specified when <b>action</b> is set to <b>REDIRECT_TO_POOL</b>. The listener must meet the following requirements:</p> <ul style="list-style-type: none"><li>• Can only be an HTTPS listener.</li><li>• Can only be a listener of the same load balancer.</li></ul>                                                                                         |
| admin_state_up       | No        | Boolean | <p>Specifies the administrative status of the forwarding policy. The value can only be <b>true</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## Response

**Table 6-169** Parameter description

| Parameter | Type                   | Description                                                                     |
|-----------|------------------------|---------------------------------------------------------------------------------|
| l7policy  | <b>L7policy</b> object | Specifies the forwarding policy. For details, see <a href="#">Table 6-170</a> . |

**Table 6-170 l7policy** parameter description

| Parameter            | Type                          | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------------|-------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                   | String                        | Specifies the forwarding policy ID.                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tenant_id            | String                        | Specifies the ID of the project where the forwarding policy is used.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| project_id           | String                        | Specifies the ID of the project to which the forwarding policy belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                                                                                      |
| name                 | String                        | Specifies the forwarding policy name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| admin_state_up       | Boolean                       | Specifies the administrative status of the forwarding policy. The value can only be <b>true</b> .                                                                                                                                                                                                                                                                                                                                                                                                      |
| description          | String                        | Provides supplementary information about the forwarding policy.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| listener_id          | String                        | Specifies the ID of the listener to which the forwarding policy is added.                                                                                                                                                                                                                                                                                                                                                                                                                              |
| action               | String                        | <p>Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL</b>: Requests are forwarded to the backend server group specified by <b>redirect_pool_id</b>.</li><li>• <b>REDIRECT_TO_LISTENER</b>: Requests are redirected from the HTTP listener specified by <b>listener_id</b> to the HTTPS listener specified by <b>redirect_listener_id</b>.</li></ul> |
| redirect_pool_id     | String                        | Specifies the ID of the backend server group to which traffic is forwarded.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| redirect_listener_id | String                        | Specifies the ID of the listener to which the traffic is redirected.                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| redirect_url         | String                        | Specifies the URL to which traffic is redirected. This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                                          |
| rules                | Array of <b>Rules</b> objects | Lists the forwarding rules of the forwarding policy. For details, see <a href="#">Table 6-156</a> .                                                                                                                                                                                                                                                                                                                                                                                                    |
| position             | Integer                       | <p>Specifies the forwarding priority. The value ranges from <b>1</b> to <b>100</b>. The default value is <b>100</b>.</p> <p>This parameter is reserved.</p>                                                                                                                                                                                                                                                                                                                                            |

| Parameter           | Type   | Description                                                                                                                             |
|---------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | String | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the forwarding policy. |

**Table 6-171** rules parameter description

| Parameter | Type   | Description                                         |
|-----------|--------|-----------------------------------------------------|
| id        | String | Specifies the ID of the associated forwarding rule. |

## Example Request

- Example request: Updating a forwarding policy  
PUT https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586  

```
{
 "l7policy": {
 "name": "test"
 }
}
```

## Example Response

- Example response  

```
{
 "l7policy": {
 "redirect_pool_id": "431a03eb-81bb-408e-ae37-7ce19023692b",
 "redirect_listener_id": null,
 "description": "",
 "admin_state_up": true,
 "rules": [
 {
 "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
 },
 {
 "id": "f02b3bca-69d2-4335-a3fa-a8054e996213"
 }
]
 },
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "listener_id": "26058b64-6185-4e06-874e-4bd68b7633d0",
 "redirect_url": null,
 "action": "REDIRECT_TO_POOL",
 "position": 2,
 "provisioning_status": "ACTIVE",
 "id": "5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586",
 "name": "test"
}
```

## Status Code

For details, see [Status Codes](#).

## 6.6.5 Deleting a Forwarding Policy

### Function

This API is used to delete a forwarding policy.

### URI

DELETE /v2/{project\_id}/elb/l7policies/{l7policy\_id}

**Table 6-172** Parameter description

| Parameter   | Mandator<br>y | Type   | Description                         |
|-------------|---------------|--------|-------------------------------------|
| project_id  | Yes           | String | Specifies the project ID.           |
| l7policy_id | Yes           | String | Specifies the forwarding policy ID. |

### Request

None

### Response

None

### Example Request

- Example request: Deleting a forwarding policy  
DELETE https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/  
5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586

### Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

## 6.7 Forwarding Rule

## 6.7.1 Adding a Forwarding Rule

### Function

This API is used to add a forwarding rule. After you add a forwarding rule, the load balancer matches the domain name and path in the request and distributes the traffic to the backend server group specified by **redirect\_pool\_id** of the associated forwarding policy.

### Constraints

The match type of forwarding rules in a forwarding policy must be unique.

### URI

POST /v2/{project\_id}/elb/l7policies/{l7policy\_id}/rules

**Table 6-173** Parameter description

| Parameter   | Mandator<br>y | Type       | Description                         |
|-------------|---------------|------------|-------------------------------------|
| project_id  | Yes           | Strin<br>g | Specifies the project ID.           |
| l7policy_id | Yes           | Strin<br>g | Specifies the forwarding policy ID. |

### Request

**Table 6-174** Parameter description

| Parameter | Mandat<br>ory | Type                  | Description                                                                   |
|-----------|---------------|-----------------------|-------------------------------------------------------------------------------|
| rule      | Yes           | <b>Rule</b><br>object | Specifies the forwarding rule. For details, see <a href="#">Table 6-175</a> . |

**Table 6-175** rule parameter description

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id      | No        | String  | Specifies the ID of the project where the forwarding rule is used.<br>The value must be the same as the value of <b>project_id</b> in the token.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                   |
| admin_state_up | No        | Boolean | Specifies the administrative status of the forwarding rule. The value can only be <b>true</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| type           | Yes       | String  | Specifies the match type of a forwarding rule.<br>The value can be: <ul style="list-style-type: none"><li>• <b>HOST_NAME</b>: matches the domain name in the request.</li><li>• <b>PATH</b>: matches the path in the request.</li></ul> The match type of forwarding rules in a forwarding policy must be unique.                                                                                                                                                                                                                                                     |
| compare_type   | Yes       | String  | Specifies the match mode. The options are as follows:<br>When <b>type</b> is set to <b>HOST_NAME</b> , the value of this parameter can only be the following: <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> When <b>type</b> is set to <b>PATH</b> , the value of this parameter can be one of the following: <ul style="list-style-type: none"><li>• <b>REGEX</b>: indicates regular expression match.</li><li>• <b>STARTS_WITH</b>: indicates prefix match.</li><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> |
| invert         | No        | Boolean | Specifies whether reverse matching is supported.<br>The value can be <b>true</b> or <b>false</b> .<br>The default value is <b>false</b> .<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                              |



| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | No        | String | Specifies the key of the match content. The default value is <b>null</b> .<br>This parameter is reserved.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| value     | Yes       | String | Specifies the value of the match content. The value cannot contain spaces.<br>The value contains a maximum of 128 characters. <ul style="list-style-type: none"><li>When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&amp;\$.*+?,=!:  \()[]{} </code></li></ul> |

Response

Table 6-176 Parameter description

| Parameter | Type               | Description                                                                   |
|-----------|--------------------|-------------------------------------------------------------------------------|
| rule      | <b>Rule</b> object | Specifies the forwarding rule. For details, see <a href="#">Table 6-177</a> . |

Table 6-177 rule parameter description

| Parameter | Type   | Description                       |
|-----------|--------|-----------------------------------|
| id        | String | Specifies the forwarding rule ID. |

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id      | String  | Specifies the ID of the project where the forwarding rule is used.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| project_id     | String  | Specifies the ID of the project to which the forwarding rule belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| admin_state_up | Boolean | Specifies the administrative status of the forwarding rule. The value can only be <b>true</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| type           | String  | Specifies the match type of a forwarding rule.<br>The value can be: <ul style="list-style-type: none"><li>• <b>HOST_NAME</b>: matches the domain name in the request.</li><li>• <b>PATH</b>: matches the path in the request.</li></ul>                                                                                                                                                                                                                                                                                                                               |
| compare_type   | String  | Specifies the match mode. The options are as follows:<br>When <b>type</b> is set to <b>HOST_NAME</b> , the value of this parameter can only be the following: <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> When <b>type</b> is set to <b>PATH</b> , the value of this parameter can be one of the following: <ul style="list-style-type: none"><li>• <b>REGEX</b>: indicates regular expression match.</li><li>• <b>STARTS_WITH</b>: indicates prefix match.</li><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> |
| invert         | Boolean | Specifies whether reverse matching is supported.<br>The value can be <b>true</b> or <b>false</b> . The default value is <b>false</b> .<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                 |
| key            | String  | Specifies the key of the match content. The default value is <b>null</b> .<br>This parameter is reserved.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                          |

| Parameter           | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value               | String | <p>Specifies the value of the match content. The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"><li>When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&amp;\$.*+?,:!=  \()[]{}</code></li></ul> |
| provisioning_status | String | <p>This parameter is reserved, and its value can only be <b>ACTIVE</b>.</p> <p>It specifies the provisioning status of the forwarding rule.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## Example Request

- Example request: Adding a forwarding rule  
POST <https://{endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules>

```
{
 "rule": {
 "compare_type": "EQUAL_TO",
 "type": "PATH",
 "value": "/bbb.html"
 }
}
```

## Example Response

- Example response

```
{
 "rule": {
 "compare_type": "EQUAL_TO",
 "admin_state_up": true,
 "provisioning_status": "ACTIVE",
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "invert": false,
 "value": "/bbb.html",
 "key": null,
 "type": "PATH",
 "id": "c6f457b8-bf6f-45d7-be5c-a3226945b7b1"
 }
}
```

## Status Code

For details, see [Status Codes](#).

## 6.7.2 Querying Forwarding Rules

### Function

This API is used to query forwarding rules. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

### Constraints

Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query. Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

### URI

GET /v2/{project\_id}/elb/l7policies/{l7policy\_id}/rules

**Table 6-178** Path parameters

| Parameter   | Mandatory | Type   | Description                         |
|-------------|-----------|--------|-------------------------------------|
| project_id  | Yes       | String | Specifies the project ID.           |
| l7policy_id | Yes       | String | Specifies the forwarding policy ID. |

**Table 6-179** Query parameters

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                               |
|-----------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker    | No        | String  | Specifies the ID of the forwarding rule from which pagination query starts, that is, the ID of the last forwarding rule on the previous page.<br>This parameter must be used together with <b>limit</b> . |
| limit     | No        | Integer | Specifies the number of forwarding rules on each page. If this parameter is not set, all forwarding rules are queried by default.                                                                         |

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse   | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br><br>This parameter must be used together with <b>limit</b> . |
| id             | No        | String  | Specifies the forwarding rule ID.                                                                                                                                                                                                                                                                                                                                                                                                 |
| tenant_id      | No        | String  | Specifies the ID of the project where the forwarding rule is used.<br><br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                         |
| project_id     | No        | String  | Specifies the ID of the project to which the forwarding rule belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                   |
| admin_state_up | No        | Boolean | Specifies the administrative status of the forwarding rule.                                                                                                                                                                                                                                                                                                                                                                       |
| type           | No        | String  | Specifies the match type of a forwarding rule.<br><br>The value can be: <ul style="list-style-type: none"><li>• <b>HOST_NAME</b>: matches the domain name in the request.</li><li>• <b>PATH</b>: matches the path in the request.</li></ul><br>The match type of forwarding rules in a forwarding policy must be unique.                                                                                                          |

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|--------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| compare_type | No        | String  | <p>Specifies the match mode. The options are as follows:</p> <p>When <b>type</b> is set to <b>HOST_NAME</b>, the value of this parameter can only be the following:</p> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> <p>When <b>type</b> is set to <b>PATH</b>, the value of this parameter can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>REGEX</b>: indicates regular expression match.</li><li>• <b>STARTS_WITH</b>: indicates prefix match.</li><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul>                                                                                                            |
| invert       | No        | Boolean | <p>Specifies whether reverse matching is supported.</p> <p>The value can be <b>true</b> or <b>false</b>. The default value is <b>false</b>.</p> <p>This parameter is reserved.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| key          | No        | String  | <p>Specifies the key of the match content. The default value is <b>null</b>.</p> <p>This parameter is reserved.</p> <p>The value contains a maximum of 255 characters.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| value        | No        | String  | <p>Specifies the value of the match content.</p> <p>The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"><li>• When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>• When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~!:@^-%#&amp;\$.*+?;=:  \()[]{}</code></li></ul> |

| Parameter           | Mandatory | Type   | Description                                                                                                                           |
|---------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | No        | String | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the forwarding rule. |

## Request

None

## Response

**Table 6-180** Parameter description

| Parameter | Type                                   | Description                                                                |
|-----------|----------------------------------------|----------------------------------------------------------------------------|
| rules     | Array of <a href="#">Rules</a> objects | Lists the forwarding rules. For details, see <a href="#">Table 6-181</a> . |

**Table 6-181** rules parameter description

| Parameter      | Type    | Description                                                                                                                                                                                                                             |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the forwarding rule ID.                                                                                                                                                                                                       |
| tenant_id      | String  | Specifies the ID of the project where the forwarding rule is used.<br>The value contains a maximum of 255 characters.                                                                                                                   |
| project_id     | String  | Specifies the ID of the project to which the forwarding rule belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                         |
| admin_state_up | Boolean | Specifies the administrative status of the forwarding rule. The value can only be <b>true</b> .                                                                                                                                         |
| type           | String  | Specifies the match type of a forwarding rule.<br>The value can be: <ul style="list-style-type: none"><li>● <b>HOST_NAME</b>: matches the domain name in the request.</li><li>● <b>PATH</b>: matches the path in the request.</li></ul> |

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| compare_type        | String  | <p>Specifies the match mode. The options are as follows:</p> <p>When <b>type</b> is set to <b>HOST_NAME</b>, the value of this parameter can only be the following:</p> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> <p>When <b>type</b> is set to <b>PATH</b>, the value of this parameter can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>REGEX</b>: indicates regular expression match.</li><li>• <b>STARTS_WITH</b>: indicates prefix match.</li><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul>                                                                                                              |
| invert              | Boolean | <p>Specifies whether reverse matching is supported.</p> <p>The value can be <b>true</b> or <b>false</b>. The default value is <b>false</b>.</p> <p>This parameter is reserved.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| key                 | String  | <p>Specifies the key of the match content. The default value is <b>null</b>.</p> <p>This parameter is reserved.</p> <p>The value contains a maximum of 255 characters.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| value               | String  | <p>Specifies the value of the match content.</p> <p>The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"><li>• When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>• When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&amp;\$. *+?,=!:  \()[]{}</code></li></ul> |
| provisioning_status | String  | <p>This parameter is reserved, and its value can only be <b>ACTIVE</b>.</p> <p>It specifies the provisioning status of the forwarding rule.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



### Example Request

- Example request: Querying all forwarding rules of a specific forwarding policy  
GET https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules

### Example Response

- Example response

```
{
 "rules": [
 {
 "compare_type": "EQUAL_TO",
 "provisioning_status": "ACTIVE",
 "admin_state_up": true,
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "invert": false,
 "value": "www.test.com",
 "key": null,
 "type": "HOST_NAME",
 "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
 },
 {
 "compare_type": "EQUAL_TO",
 "provisioning_status": "ACTIVE",
 "admin_state_up": true,
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "invert": false,
 "value": "/aaa.html",
 "key": null,
 "type": "PATH",
 "id": "f02b3bca-69d2-4335-a3fa-a8054e996213"
 }
]
}
```

### Status Code

For details, see [Status Codes](#).

## 6.7.3 Querying Details of a Forwarding Rule

### Function

This API is used to query details about a forwarding rule.

### URI

GET /v2/{project\_id}/elb/l7policies/{l7policy\_id}/rules/{l7rule\_id}

**Table 6-182** Parameter description

| Parameter  | Mandator<br>y | Type       | Description               |
|------------|---------------|------------|---------------------------|
| project_id | Yes           | Strin<br>g | Specifies the project ID. |

| Parameter   | Mandatory | Type   | Description                         |
|-------------|-----------|--------|-------------------------------------|
| l7policy_id | Yes       | String | Specifies the forwarding policy ID. |
| l7rule_id   | Yes       | String | Specifies the forwarding rule ID.   |

## Request

None

## Response

**Table 6-183** Parameter description

| Parameter | Type                        | Description                                                                   |
|-----------|-----------------------------|-------------------------------------------------------------------------------|
| rule      | <a href="#">Rule</a> object | Specifies the forwarding rule. For details, see <a href="#">Table 6-184</a> . |

**Table 6-184** rule parameter description

| Parameter      | Type    | Description                                                                                                                                                                                                                             |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the forwarding rule ID.                                                                                                                                                                                                       |
| tenant_id      | String  | Specifies the ID of the project where the forwarding rule is used.<br>The value contains a maximum of 255 characters.                                                                                                                   |
| project_id     | String  | Specifies the ID of the project to which the forwarding rule belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                         |
| admin_state_up | Boolean | Specifies the administrative status of the forwarding rule. The value can only be <b>true</b> .                                                                                                                                         |
| type           | String  | Specifies the match type of a forwarding rule.<br>The value can be: <ul style="list-style-type: none"><li>• <b>HOST_NAME</b>: matches the domain name in the request.</li><li>• <b>PATH</b>: matches the path in the request.</li></ul> |

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| compare_type        | String  | <p>Specifies the match mode. The options are as follows:</p> <p>When <b>type</b> is set to <b>HOST_NAME</b>, the value of this parameter can only be the following:</p> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> <p>When <b>type</b> is set to <b>PATH</b>, the value of this parameter can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>REGEX</b>: indicates regular expression match.</li><li>• <b>STARTS_WITH</b>: indicates prefix match.</li><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul>                                                                                                             |
| invert              | Boolean | <p>Specifies whether reverse matching is supported.</p> <p>The value can be <b>true</b> or <b>false</b>. The default value is <b>false</b>.</p> <p>This parameter is reserved.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| key                 | String  | <p>Specifies the key of the match content. The default value is <b>null</b>.</p> <p>This parameter is reserved.</p> <p>The value contains a maximum of 255 characters.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| value               | String  | <p>Specifies the value of the match content.</p> <p>The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"><li>• When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>• When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&amp;\$.*+?,=!:  \()[]{}</code></li></ul> |
| provisioning_status | String  | <p>This parameter is reserved, and its value can only be <b>ACTIVE</b>.</p> <p>It specifies the provisioning status of the forwarding rule.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |

### Example Request

- Example request: Querying details of a forwarding rule  
GET https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules/67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3

### Example Response

- Example response 1

```
{
 "rule": {
 "compare_type": "EQUAL_TO",
 "provisioning_status": "ACTIVE",
 "admin_state_up": true,
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "invert": false,
 "value": "/index.html",
 "key": null,
 "type": "PATH",
 "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
 }
}
```

### Status Code

For details, see [Status Codes](#).

## 6.7.4 Updating a Forwarding Rule

### Function

This API is used to update a forwarding rule. You can change the mode that how traffic is distributed by updating the forwarding rule.

### URI

PUT /v2/{project\_id}/elb/l7policies/{l7policy\_id}/rules/{l7rule\_id}

**Table 6-185** Parameter description

| Parameter   | Mandator<br>y | Type       | Description                         |
|-------------|---------------|------------|-------------------------------------|
| project_id  | Yes           | Strin<br>g | Specifies the project ID.           |
| l7policy_id | Yes           | Strin<br>g | Specifies the forwarding policy ID. |
| l7rule_id   | Yes           | Strin<br>g | Specifies the forwarding rule ID.   |

## Request

**Table 6-186** Parameter description

| Parameter | Mandatory | Type                        | Description                                                                   |
|-----------|-----------|-----------------------------|-------------------------------------------------------------------------------|
| rule      | Yes       | <a href="#">Rule</a> object | Specifies the forwarding rule. For details, see <a href="#">Table 6-187</a> . |

**Table 6-187** rule parameter description

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| compare_type   | No        | String  | <p>Specifies the match mode. The options are as follows:</p> <p>When <b>type</b> is set to <b>HOST_NAME</b>, the value of this parameter can only be the following:</p> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> <p>When <b>type</b> is set to <b>PATH</b>, the value of this parameter can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>REGEX</b>: indicates regular expression match.</li><li>• <b>STARTS_WITH</b>: indicates prefix match.</li><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> |
| admin_state_up | No        | Boolean | Specifies the administrative status of the forwarding rule. The value can only be <b>true</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| invert         | No        | Boolean | <p>Specifies whether reverse matching is supported.</p> <p>The value can be <b>true</b> or <b>false</b>. The default value is <b>false</b>.</p> <p>This parameter is reserved.</p>                                                                                                                                                                                                                                                                                                                                                                                                    |
| key            | No        | String  | <p>Specifies the key of the match content. The default value is <b>null</b>.</p> <p>This parameter is reserved.</p> <p>The value contains a maximum of 255 characters.</p>                                                                                                                                                                                                                                                                                                                                                                                                            |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | No        | String | <p>Specifies the value of the match content. The value cannot contain spaces.</p> <p>The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"><li>When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&amp;\$.*+?=:  \()[]{}</code></li></ul> |

## Response

**Table 6-188** Parameter description

| Parameter | Type               | Description                                                                   |
|-----------|--------------------|-------------------------------------------------------------------------------|
| rule      | <b>Rule</b> object | Specifies the forwarding rule. For details, see <a href="#">Table 6-189</a> . |

**Table 6-189** rule parameter description

| Parameter      | Type    | Description                                                                                                                      |
|----------------|---------|----------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the forwarding rule ID.                                                                                                |
| tenant_id      | String  | <p>Specifies the ID of the project where the forwarding rule is used.</p> <p>The value contains a maximum of 255 characters.</p> |
| project_id     | String  | Specifies the ID of the project to which the forwarding rule belongs. This parameter has the same meaning as <b>tenant_id</b> .  |
| admin_state_up | Boolean | Specifies the administrative status of the forwarding rule. The value can only be <b>true</b> .                                  |

| Parameter    | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type         | String  | <p>Specifies the match type of a forwarding rule. The value can be:</p> <ul style="list-style-type: none"><li>• <b>HOST_NAME</b>: matches the domain name in the request.</li><li>• <b>PATH</b>: matches the path in the request.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| compare_type | String  | <p>Specifies the match mode. The options are as follows:</p> <p>When <b>type</b> is set to <b>HOST_NAME</b>, the value of this parameter can only be the following:</p> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> <p>When <b>type</b> is set to <b>PATH</b>, the value of this parameter can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>REGEX</b>: indicates regular expression match.</li><li>• <b>STARTS_WITH</b>: indicates prefix match.</li><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul>                                                                                                          |
| invert       | Boolean | <p>Specifies whether reverse matching is supported.</p> <p>The value can be <b>true</b> or <b>false</b>. The default value is <b>false</b>.</p> <p>This parameter is reserved.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| key          | String  | <p>Specifies the key of the match content. The default value is <b>null</b>.</p> <p>This parameter is reserved.</p> <p>The value contains a maximum of 255 characters.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| value        | String  | <p>Specifies the value of the match content. The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"><li>• When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>• When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&amp;\$. *+? ,=!:  \() [] {}</code></li></ul> |

| Parameter           | Type   | Description                                                                                                                           |
|---------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | String | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the forwarding rule. |

## Example Request

- Example request: Updating a forwarding rule  
PUT https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules/c6f457b8-bf6f-45d7-be5c-a3226945b7b1  

```
{
 "rule": {
 "compare_type": "STARTS_WITH",
 "value": "/ccc.html"
 }
}
```

## Example Response

- Example response  

```
{
 "rule": {
 "compare_type": "STARTS_WITH",
 "provisioning_status": "ACTIVE",
 "admin_state_up": true,
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "invert": false,
 "value": "/ccc.html",
 "key": null,
 "type": "PATH",
 "id": "c6f457b8-bf6f-45d7-be5c-a3226945b7b1"
 }
}
```

## Status Code

For details, see [Status Codes](#).

## 6.7.5 Deleting a Forwarding Rule

### Function

This API is used to delete a forwarding rule.

### URI

DELETE /v2/{project\_id}/elb/l7policies/{l7policy\_id}/rules/{l7rule\_id}



**Table 6-190** Parameter description

| Parameter   | Mandatory | Type   | Description                         |
|-------------|-----------|--------|-------------------------------------|
| project_id  | Yes       | String | Specifies the project ID.           |
| l7policy_id | Yes       | String | Specifies the forwarding policy ID. |
| l7rule_id   | Yes       | String | Specifies the forwarding rule ID.   |

## Request

None

## Response

None

## Example Request

- Example request: Deleting a forwarding rule  
DELETE https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/  
5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules/c6f457b8-bf6f-45d7-be5c-a3226945b7b1

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

# 6.8 Whitelist

## 6.8.1 Adding a Whitelist

### Function

This API is used to add a whitelist to control access to a specific listener. After a whitelist is added, only IP addresses in the whitelist can access the listener.

### URI

POST /v2/{project\_id}/elb/whitelists

**Table 6-191** Parameter description

| Parameter  | Mandatory | Type   | Description               |
|------------|-----------|--------|---------------------------|
| project_id | Yes       | String | Specifies the project ID. |

## Request

**Table 6-192** Parameter description

| Parameter | Mandatory | Type                             | Description                                                             |
|-----------|-----------|----------------------------------|-------------------------------------------------------------------------|
| whitelist | Yes       | <a href="#">Whitelist</a> object | Specifies the whitelist. For details, see <a href="#">Table 6-193</a> . |

**Table 6-193** whitelist parameter description

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                             |
|------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id        | No        | String  | Specifies the ID of the project where the whitelist is used.<br><br>The value must be the same as the value of <b>project_id</b> in the token.<br><br>The value contains a maximum of 255 characters.                                                                                                   |
| listener_id      | Yes       | String  | Specifies the listener ID.<br><br>Only one whitelist can be created for a listener.                                                                                                                                                                                                                     |
| enable_whitelist | No        | Boolean | Specifies whether to enable access control.<br><br><b>true</b> : Access control is enabled.<br><b>false</b> : Access control is disabled.<br><br>The default value is <b>true</b> .                                                                                                                     |
| whitelist        | No        | String  | Specifies the IP addresses in the whitelist. Use commas (,) to separate multiple IP addresses.<br><br>You can specify an IP address, for example, 192.168.11.1.<br><br>You can also specify an IP address range, for example, 192.168.0.1/24.<br><br>The default value is an empty string, that is, "". |

## Response

**Table 6-194** Parameter description

| Parameter | Type                    | Description                                                             |
|-----------|-------------------------|-------------------------------------------------------------------------|
| whitelist | <b>Whitelist</b> object | Specifies the whitelist. For details, see <a href="#">Table 6-195</a> . |

**Table 6-195** whitelist parameter description

| Parameter        | Type    | Description                                                                                                                           |
|------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------|
| id               | String  | Specifies the whitelist ID.                                                                                                           |
| tenant_id        | String  | Specifies the ID of the project where the whitelist is used.<br>The value contains a maximum of 255 characters.                       |
| listener_id      | String  | Specifies the ID of the listener to which the whitelist is added.                                                                     |
| enable_whitelist | Boolean | Specifies whether to enable access control.<br><b>true</b> : Access control is enabled.<br><b>false</b> : Access control is disabled. |
| whitelist        | String  | Specifies the IP addresses in the whitelist.                                                                                          |

## Example Request

- Example request: Adding a whitelist  
POST https://{Endpoint}/v2/eabfefa3fd1740a88a47ad98e132d238/elb/whitelists  

```
{
 "whitelist": {
 "listener_id": "eabfefa3fd1740a88a47ad98e132d238",
 "enable_whitelist": true,
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
 }
}
```

## Example Response

- Example response  

```
{
 "whitelist": {
 "id": "eabfefa3fd1740a88a47ad98e132d238",
 "listener_id": "eabfefa3fd1740a88a47ad98e132d238",
 "tenant_id": "eabfefa3fd1740a88a47ad98e132d238",
 "enable_whitelist": true,
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
 }
}
```

```
}
}
```

Status Code

For details, see [Status Codes](#).

6.8.2 Querying Details of a Whitelist

Function

This API is used to query details about a whitelist using its ID.

URI

GET /v2/{project\_id}/elb/whitelists/{whitelist\_id}

Table 6-196 Parameter description

| Parameter    | Mandatory | Type   | Description                 |
|--------------|-----------|--------|-----------------------------|
| project_id   | Yes       | String | Specifies the project ID.   |
| whitelist_id | Yes       | String | Specifies the whitelist ID. |

Request

None

Response

Table 6-197 Parameter description

| Parameter | Type                             | Description                                                             |
|-----------|----------------------------------|-------------------------------------------------------------------------|
| whitelist | <a href="#">Whitelist</a> object | Specifies the whitelist. For details, see <a href="#">Table 6-198</a> . |

Table 6-198 whitelist parameter description

| Parameter | Type   | Description                                                                                                     |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------|
| id        | String | Specifies the whitelist ID.                                                                                     |
| tenant_id | String | Specifies the ID of the project where the whitelist is used.<br>The value contains a maximum of 255 characters. |

| Parameter        | Type    | Description                                                                                                                           |
|------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------|
| listener_id      | String  | Specifies the ID of the listener to which the whitelist is added.                                                                     |
| enable_whitelist | Boolean | Specifies whether to enable access control.<br><b>true</b> : Access control is enabled.<br><b>false</b> : Access control is disabled. |
| whitelist        | String  | Specifies the IP addresses in the whitelist.                                                                                          |

## Example Request

- Example request: Querying details of a whitelist  
GET https://{Endpoint}/v2/eabfefa3fd1740a88a47ad98e132d238/elb/whitelists/09e64049-2ab0-4763-a8c5-f4207875dc3e

## Example Response

- Example response

```
{
 "whitelist": {
 "id": "eabfefa3fd1740a88a47ad98e132d238",
 "listener_id": "eabfefa3fd1740a88a47ad98e132d238",
 "tenant_id": "eabfefa3fd1740a88a47ad98e132d238",
 "enable_whitelist": true,
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
 }
}
```

## Status Code

For details, see [Status Codes](#).

## 6.8.3 Querying Whitelists

### Function

This API is used to query the whitelists. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

### Constraints

Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query. Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

### URI

GET /v2/{project\_id}/elb/whitelists

**Table 6-199** Path parameters

| Parameter  | Mandatory | Type   | Description               |
|------------|-----------|--------|---------------------------|
| project_id | Yes       | String | Specifies the project ID. |

**Table 6-200** Query parameters

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker           | No        | String  | Specifies the ID of the whitelist from which pagination query starts, that is, the ID of the last whitelist on the previous page.<br>This parameter must be used together with <b>limit</b> .                                                                                                                                                                                                                                 |
| limit            | No        | Integer | Specifies the number of whitelists on each page. If this parameter is not set, all whitelists are queried by default.                                                                                                                                                                                                                                                                                                         |
| page_reverse     | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br>This parameter must be used together with <b>limit</b> . |
| id               | No        | String  | Specifies the whitelist ID.                                                                                                                                                                                                                                                                                                                                                                                                   |
| tenant_id        | No        | String  | Specifies the ID of the project where the whitelist is used.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                               |
| listener_id      | No        | String  | Specifies the ID of the listener to which the whitelist is added.                                                                                                                                                                                                                                                                                                                                                             |
| enable_whitelist | No        | Boolean | Specifies whether to enable access control.<br><b>true</b> : Access control is enabled.<br><b>false</b> : Access control is disabled.                                                                                                                                                                                                                                                                                         |

| Parameter | Mandatory | Type   | Description                                  |
|-----------|-----------|--------|----------------------------------------------|
| whitelist | No        | String | Specifies the IP addresses in the whitelist. |

## Request

None

## Response

**Table 6-201** Parameter description

| Parameter  | Type                                        | Description                                                             |
|------------|---------------------------------------------|-------------------------------------------------------------------------|
| whitelists | Array of <a href="#">Whitelists</a> objects | Specifies the whitelist. For details, see <a href="#">Table 6-202</a> . |

**Table 6-202 whitelists** parameter description

| Parameter        | Type    | Description                                                                                                                         |
|------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------|
| id               | String  | Specifies the whitelist ID.                                                                                                         |
| tenant_id        | String  | Specifies the ID of the project where the whitelist is used.<br>The value contains a maximum of 255 characters.                     |
| listener_id      | String  | Specifies the ID of the listener to which the whitelist is added.                                                                   |
| enable_whitelist | Boolean | Specifies whether to enable access control.<br><b>true:</b> Access control is enabled.<br><b>false:</b> Access control is disabled. |
| whitelist        | String  | Specifies the IP addresses in the whitelist.                                                                                        |

## Example Request

- Example request 1: Querying all whitelists  
GET https://{Endpoint}/v2/eabfefa3fd1740a88a47ad98e132d238/elb/whitelists
- Example request 2: Querying the whitelists added to listener eabfefa3fd1740a88a47ad98e132d230

```
GET https://{Endpoint}/v2/eabfefa3fd1740a88a47ad98e132d238/elb/whitelists?
listener_id=eabfefa3fd1740a88a47ad98e132d230
```

## Example Response

- Example response 1

```
{
 "whitelists": [
 {
 "id": "eabfefa3fd1740a88a47ad98e132d238",
 "listener_id": "eabfefa3fd1740a88a47ad98e132d238",
 "tenant_id": "eabfefa3fd1740a88a47ad98e132d238",
 "enable_whitelist": true,
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
 },
 {
 "id": "eabfefa3fd1740a88a47ad98e132d326",
 "listener_id": "eabfefa3fd1740a88a47ad98e132d327",
 "tenant_id": "eabfefa3fd1740a88a47ad98e132d436",
 "enable_whitelist": true,
 "whitelist": "192.168.12.1,192.168.1.1/24,192.168.203.18/8,100.164.5.1/24"
 }
]
}
```

- Example response 2

```
{
 "whitelists": [
 {
 "id": "eabfefa3fd1740a88a47ad98e132d238",
 "listener_id": "eabfefa3fd1740a88a47ad98e132d230",
 "tenant_id": "eabfefa3fd1740a88a47ad98e132d239",
 "enable_whitelist": true,
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
 },
 {
 "id": "eabfefa3fd1740a88a47ad98e132d326",
 "listener_id": "eabfefa3fd1740a88a47ad98e132d327",
 "tenant_id": "eabfefa3fd1740a88a47ad98e132d439",
 "enable_whitelist": true,
 "whitelist": "192.168.12.1,192.168.1.1/24,192.168.203.18/8,100.164.5.1/24"
 }
]
}
```

## Status Code

For details, see [Status Codes](#).

## 6.8.4 Updating a Whitelist

### Function

This API is used to update a whitelist. You can enable or disable the whitelist function or change IP addresses in the whitelist. If you change IP addresses in the whitelist, it will be deleted, and a new one is generated.

### URI

```
PUT /v2/{project_id}/elb/whitelists/{whitelist_id}
```



**Table 6-203** Parameter description

| Parameter    | Mandatory | Type   | Description                 |
|--------------|-----------|--------|-----------------------------|
| project_id   | Yes       | String | Specifies the project ID.   |
| whitelist_id | Yes       | String | Specifies the whitelist ID. |

## Request

**Table 6-204** Parameter description

| Parameter | Mandatory | Type                             | Description                                                             |
|-----------|-----------|----------------------------------|-------------------------------------------------------------------------|
| whitelist | Yes       | <a href="#">Whitelist</a> object | Specifies the whitelist. For details, see <a href="#">Table 6-205</a> . |

**Table 6-205** whitelist parameter description

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                 |
|------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable_whitelist | No        | Boolean | Specifies whether to enable access control.<br><b>true</b> : Access control is enabled.<br><b>false</b> : Access control is disabled.<br>The default value is <b>true</b> .                                                                                                                 |
| whitelist        | No        | String  | Specifies the IP addresses in the whitelist. Use commas (,) to separate multiple IP addresses.<br>You can specify an IP address, for example, 192.168.11.1.<br>You can also specify an IP address range, for example, 192.168.0.1/24.<br>The default value is an empty string, that is, "". |

## Response

**Table 6-206** Parameter description

| Parameter | Type                             | Description                                                             |
|-----------|----------------------------------|-------------------------------------------------------------------------|
| whitelist | <a href="#">Whitelist</a> object | Specifies the whitelist. For details, see <a href="#">Table 6-207</a> . |

**Table 6-207** whitelist parameter description

| Parameter        | Type    | Description                                                                                                                           |
|------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------|
| id               | String  | Specifies the whitelist ID.                                                                                                           |
| tenant_id        | String  | Specifies the ID of the project where the whitelist is used.<br>The value contains a maximum of 255 characters.                       |
| listener_id      | String  | Specifies the ID of the listener to which the whitelist is added.                                                                     |
| enable_whitelist | Boolean | Specifies whether to enable access control.<br><b>true</b> : Access control is enabled.<br><b>false</b> : Access control is disabled. |
| whitelist        | String  | Specifies the IP addresses in the whitelist.                                                                                          |

## Example Request

- Example request: Updating a whitelist  
PUT <https://{Endpoint}/v2/eabfefa3fd1740a88a47ad98e132d238/elb/whitelists/dcaf46f1-037c-4f63-a31f-e0c4c18032c7>

```
{
 "whitelist": {
 "enable_whitelist": true,
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
 }
}
```

## Example Response

- Example response

```
{
 "whitelist": {
 "id": "eabfefa3fd1740a88a47ad98e132d238",
 "listener_id": "eabfefa3fd1740a88a47ad98e132d238",
 "tenant_id": "eabfefa3fd1740a88a47ad98e132d238",
 "enable_whitelist": true,
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
 }
}
```

```
}
}
```

Status Code

For details, see [Status Codes](#).

6.8.5 Deleting a Whitelist

Function

This API is used to delete a specific whitelist.

URI

DELETE /v2/{project\_id}/elb/whitelists/{whitelist\_id}

Table 6-208 Parameter description

| Parameter    | Mandator<br>y | Type       | Description                 |
|--------------|---------------|------------|-----------------------------|
| project_id   | Yes           | Strin<br>g | Specifies the project ID.   |
| whitelist_id | Yes           | Strin<br>g | Specifies the whitelist ID. |

Request

None

Response

None

Example Request

- Example request: Deleting a whitelist  
DELETE https://{Endpoint}/v2/eabfefa3fd1740a88a47ad98e132d238/elb/whitelists/  
35cb8516-1173-4035-8dae-0dae3453f37f

Example Response

- Example response  
None

Status Code

For details, see [Status Codes](#).

## 6.9 Certificate

### 6.9.1 Creating a Certificate

#### Function

This API is used to create a certificate. After a certificate is bound to a listener, the load balancer authenticates the client using this certificate, and backend servers can establish secure and reliable HTTP connections with the client.

#### URI

POST /v2/{project\_id}/elb/certificates

**Table 6-209** Path parameters

| Parameter  | Mandatory | Type   | Description               |
|------------|-----------|--------|---------------------------|
| project_id | Yes       | String | Specifies the project ID. |

#### Request

**Table 6-210** Query parameters

| Parameter      | Mandatory | Type    | Description                                                                                                                   |
|----------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | Specifies the administrative status of the certificate.<br>This parameter is reserved, and the default value is <b>true</b> . |
| name           | No        | String  | Specifies the certificate name.<br>The value contains a maximum of 255 characters.                                            |
| description    | No        | String  | Provides supplementary information about the certificate.<br>The value contains a maximum of 255 characters.                  |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type        | No        | String | <p>Specifies the certificate type. The default value is <b>server</b>.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>server</b>: indicates the server certificate.</li><li>• <b>client</b>: indicates the CA certificate.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| domain      | No        | String | <p>Specifies the domain name associated with the server certificate. The default value is <b>null</b>.</p> <p>The value contains a maximum of 100 characters.</p> <p>Value range:</p> <ul style="list-style-type: none"><li>• A common domain name contains 0 to 100 characters and consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit.</li><li>• In addition to the requirements for common domain names, a wildcard domain name can start with an asterisk (*).</li></ul> <p><b>NOTE</b><br/>This parameter takes effect only when <b>type</b> is set to <b>server</b>.</p> |
| private_key | No        | String | <p>Specifies the private key of the server certificate. The value must be PEM encoded.</p> <ul style="list-style-type: none"><li>• This parameter will be ignored if <b>type</b> is set to <b>client</b>. A CA server can still be created and used normally. This parameter will be left blank even if you enter a private key that is not PEM encoded.</li><li>• This parameter is mandatory only when <b>type</b> is set to <b>server</b>. If you enter an invalid private key, an error is returned.</li></ul>                                                                                                                                                                                                           |

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| certificate           | Yes       | String | <p>Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter <b>type</b> determines whether a public key or CA certificate is required.</p> <p>Both types of certificates are in PEM format.</p>                                                                                                                                                                                                                  |
| enterprise_project_id | No        | String | <p>Specifies the enterprise project ID. When creating a load balancer, you can assign an enterprise project to the load balancer.</p> <p>The value is character string <b>0</b> or a UUID with hyphens (-). Value <b>0</b> indicates the default enterprise project.</p> <p>The default value is <b>0</b>.</p> <p><b>NOTE</b><br/>For more information about enterprise projects and how to obtain enterprise project IDs, see <a href="#">Enterprise Management User Guide</a>.</p> |
| source                | No        | String | <p>Specifies the source of the certificate. The default value is <b>null</b>.</p> <p>Constraints: If <b>scm_certificate_id</b> is not left blank and <b>source</b> is not specified, the default value is <b>scm</b>.</p>                                                                                                                                                                                                                                                            |
| protection_status     | No        | String | <p>Specifies the protection status.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>nonProtection</b>: The load balancer is not protected.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> <p>Default value: <b>nonProtection</b></p>                                                                                                                      |
| protection_reason     | No        | String | <p>Specifies why the modification protection is enabled.</p> <p><b>NOTE</b><br/>This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b>.</p>                                                                                                                                                                                                                                                                                                   |

## Response

**Table 6-211** Parameter description

| Parameter      | Type    | Description                                                                                                                                                                                                                                           |
|----------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the certificate ID.                                                                                                                                                                                                                         |
| tenant_id      | String  | Specifies the ID of the project where the certificate is used.<br>The value contains a maximum of 255 characters.                                                                                                                                     |
| admin_state_up | Boolean | Specifies the administrative status of the certificate.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>         |
| name           | String  | Specifies the certificate name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                    |
| description    | String  | Provides supplementary information about the certificate.<br>The value contains a maximum of 255 characters.                                                                                                                                          |
| type           | String  | Specifies the certificate type.<br>The value can be: <ul style="list-style-type: none"><li>• <b>server</b>: indicates the server certificate.</li><li>• <b>client</b>: indicates the CA certificate.</li></ul>                                        |
| domain         | String  | Specifies the domain name associated with the server certificate.<br>The value contains a maximum of 100 characters.                                                                                                                                  |
| private_key    | String  | Specifies the private key of the server certificate in PEM format.                                                                                                                                                                                    |
| certificate    | String  | Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter <b>type</b> determines whether a public key or CA certificate is required. Both types of certificates are in PEM format. |
| expire_time    | String  | Specifies the time when the certificate expires.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                             |

| Parameter         | Type   | Description                                                                                                                                                                                                                                                                                                                                   |
|-------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| create_time       | String | Specifies the time when the certificate was created.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                 |
| update_time       | String | Specifies the time when the certificate was updated.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                 |
| source            | String | Specifies the source of the certificate. The default value is <b>null</b> .<br>Constraints: If <b>scm_certificate_id</b> is not left blank and <b>source</b> is not specified, the default value is <b>scm</b> .                                                                                                                              |
| protection_status | String | Specifies the protection status.<br>The value can be: <ul style="list-style-type: none"><li>● <b>nonProtection</b>: The load balancer is not protected.</li><li>● <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> Default value: <b>nonProtection</b> |
| protection_reason | String | Specifies why the modification protection is enabled.                                                                                                                                                                                                                                                                                         |

## Example Request

- Example request: Creating a certificate

POST <https://{Endpoint}/v2/930600df07ac4f66964004041bd3deaf/elb/certificates>

```
{
 "name": "https_certificate",
 "description": "description for certificate",
 "type": "server",
 "domain": "www.elb.com",
 "private_key":
 "-----BEGIN PRIVATE KEY-----
 \nMIIEvglBADANBgkqhkiG9w0BAQEFAASCBAgEAAoIBAQDQVAbOLe5xNf4M
 \n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcj8KCnX1nfzTvl2ksXITQ2o9BkpStnPe
 \ntB4s32ZiJRMlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
 \nMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lCq39buNplgDOWzEP5AzqXt
 \nCOFYn6RTH5SRug4hKNN7sT1eYMSlHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl
 \nZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwlCRLU08k
 \nEo04Z9H/AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
 \nfvcArftGgMaYWPNSNCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUSHFgZjv5OQB
 \nZVe4a5Hj1OcgYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
 \nciu9YklNNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
 \nEGpfYI6AdHlwFZcT/RNAxhP82lg2gUJSgAu66FFdJmWQXKbafKdP3zq4Up8a7Ale
 \nkrGpuPtfV1vWklg+bUFhgGaiAEYTpAUN9t2DVIiijgQKBgQDnYMMsaF0r557CM1CT
 \nXUqgCZo8MKeV2jf2drlxRRwRL33SksQbzAQ/qRLdT7GP3sCGqvkwWY2FPdFYf8kx
 \nGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSPH7JNF3Tm/JH/fbwjpp7dt
 \nJ7n8EzkRUNE6aIMHOFeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
```



```
\niWgTWHXPZxUQaYhpjXo6+IMl6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
\nlS6VjoTkF6r7VZolLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zf3bGSXU/jR4eB
\n1lVQhELG9CbKsDzKM71GyElmix/T7FnSHIWLho1qVo6AQyduNWnAQD15pr8KAd
\nXGXAZZ1FQcb3KYa+2fflERmazedOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
\n/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
\nfl7FPMdvGL8ioYbvlHFH+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\n7nLhA4R4lqm9lpV6SKegDUK4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9o
\njHjWB7pQLUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDjKxfciXKcsYr9lluk
\nfaoXgJkR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUlGKMWXzuEd
\n3fy+1rCUwzOp9LSjtYf4ege\n-----END PRIVATE KEY-----",
 "certificate":
 "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgI CERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nnb21wYW55IENBMBA4XDTE4MDcwMjEzMU0N1oXDTQ1MTEyNzEzMjU0N1owFDESMBAG
\nA1UEAwwJbG9jYWxob3N0MIIlBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
\nn0FGQzi3ucTX+DNud1p/b4XVM6I3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5
\nnU0NqPQZKUrrZ3rQeL9mYiUTJZPutYlFDDbB8CtGv+eyU9yYJslWx/Bm5kWNPh9
\nn7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\n\nlAzlsx+QM6l7QjHwJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/K
\n\nny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7yw3nkOOTLMI28IEvOWy
\n\nYd7CMJQKs1NPJBKNOCfR/wlDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\n\nnhwQKUuvJhwr/AAABMBMGA1UdJQMMAAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBCwUA
\n\nA4lBAQA8lMQxaTey7EjXtRSLVIEAMftAQPG6ijjNQuvIBYQUDauDT4W2XU25wAn
\n\nnjiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
\n\nnezmcwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNyjvPRLYLzp1HMnl6hkjPk4PCZ
\n\nnwKnha0dlScati9Cct3UzXSNJOSLalKdHErH08lqd+1BchScxCfk0xNITn1HZZGml
\n\n+vbmunok3A2luc14rnsrbkGYqXGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ
\n\niYsGDVN+9QBD0eYUHce+77s96i3l\n-----END CERTIFICATE-----",
 "source": "CCE",
 "protection_status": "consoleProtection",
 "protection_reason": "Note that the resource is created by the CCE. Modify the resource on the CCE
portal. Otherwise, services may be interrupted."
}
```

## Example Response

- Example response

```
{
 "id": "61328fa3d4db432698e197b4927f91bf",
 "tenant_id": "0c1503d710984bad92306faea3654dfd",
 "admin_state_up": true,
 "name": "https_certificate",
 "description": "description for certificate",
 "type": "server",
 "domain": "www.elb.com",
 "private_key": "-----BEGIN PRIVATE KEY-----
\nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KcN1nfzTvl2ksXLTQ2o9BkpStnPe
\nntB4s32ZiJRmlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nnMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lCq39buNplgDOWzEP5AqzXt
\nnCOFYn6RTH5SRug4hKNN7sT1eYMsLHu7wtEBDKVgrLjOCe/W2f8rLT1zESLAW2Chl
\nnZAPYUBkl/0XuTWVRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwLCRU08k
\nnEo04Z9H/AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\n\nfvfCarftGgMaYWPSPNCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUsHFgZjv5OQB
\n\nZVe4a5Hj1OcgYHwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
\n\nnciu9YklnNEHu6uRj5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
\n\nEGpfYl6AdHlwFZcT/RNAXhP82lg2gUJSgAu66FFdJmWQXKbafKdP3zq4Up8a7Ale
\n\nnkrguPtfv1vWklg+bUfhGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\n\nXUqgCZo8MKeV2jf2drLxRRwRL33SksQbzAQ/qRLd7GP3sCGqvkvWY2FPdFYf8kx
\n\nGcCeZPcleZYQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjPj7dt
\n\nJ7n8EzKRUNE6alMHOFeeYch/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\n\niWgTWHXPZxUQaYhpjXo6+IMl6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
\n\nlS6VjoTkF6r7VZolLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
\n\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zf3bGSXU/jR4eB
\n\n1lVQhELG9CbKsDzKM71GyElmix/T7FnSHIWLho1qVo6AQyduNWnAQD15pr8KAd
\n\nXGXAZZ1FQcb3KYa+2fflERmazedOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
\n\n/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
\n\nfl7FPMdvGL8ioYbvlHFH+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\n\n3fy+1rCUwzOp9LSjtYf4ege\n-----END PRIVATE KEY-----"
```

```
\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54Pwd4Ctfk9o
\njHjWB7pQLUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDJkxfciXKcsYr9Iluk
\nfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd
\n3fy+1rCUwzOp9LSjtYf4ege
\n-----END PRIVATE KEY-----",
 "certificate": "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgICEREWdQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nb21wYW55IENBMB4XDTE4MDcwMjEzMDU0N1oXDTE4MTExNzEzMDU0N1owFDESMBAG
\nA1UEAwwJbG9jYWxob3N0MIIIBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
\n0FQGzi3ucTX+DNud1p/b4XVM6l3rY7+Cfge5GMLDIUXIHXCFcGp19Z3807yNpLF5
\nU0NqPQZKUrZz3rQeLN9mYiUTJZPutYlFDDbB8CtIgV+eyU9yYJslWx/Bm5kWNPh9
\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxLnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\nlIAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/K
\nny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7yw3nkOOTLMI28IEv0Wy
\nnYd7CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\nnhwQKuUvJhwr/AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBCwUA
\nA4IBAQA8lMQxaTey7EjXtRLSVIEAMftAQPG6jjNQuvIBQYUDauDT4W2XUz5wAn
\nnjiOyQ83va672K1G9s8n6xlH+xwwdSNnozaKzC87vwSeZKIodl9I5I98TGKI6OoDa
\nnezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRLYLzp1HMn16hkPk4PCZ
\nnwKnha0dlScati9Cct3UzXSNJOSLaKdHErH08lqd+1BchScxCfk0xNITn1HZZGml
\n+vbmunok3A2luc14rnsrbkGYqxGikySN6B2cRLBDK4Y3wChiW6NVYtVqc5/mZ
\nniYsGDVN+9QBd0eYUHce+77s96i3l
\n-----END CERTIFICATE-----",
 "expire_time": "2026-09-24 07:45:00",
 "create_time": "2024-10-30 08:36:50",
 "update_time": "2024-10-30 08:36:50",
 "source": "CCE",
 "protection_status": "consoleProtection",
 "protection_reason": "Note that the resource is created by the CCE. Modify the resource on the CCE
portal. Otherwise, services may be interrupted."
}
```

## Status Code

For details, see [Status Codes](#).

## 6.9.2 Querying Certificates

### Function

This API is used to query the certificates. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

### Constraints

Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query. Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

### URI

GET /v2/{project\_id}/elb/certificates

Table 6-212 Parameter description

| Parameter  | Mandatory | Type   | Description               |
|------------|-----------|--------|---------------------------|
| project_id | Yes       | String | Specifies the project ID. |

**Table 6-213** Parameter description

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker       | No        | String  | Specifies the ID of the certificate from which pagination query starts, that is, the ID of the last certificate on the previous page. This parameter must be used together with <b>limit</b> .                                                                                                                                                                                                                             |
| limit        | No        | Integer | Specifies the number of certificates on each page. If this parameter is not set, all certificates are queried by default.                                                                                                                                                                                                                                                                                                  |
| page_reverse | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link. This parameter must be used together with <b>limit</b> . |
| id           | No        | String  | Specifies the certificate ID.                                                                                                                                                                                                                                                                                                                                                                                              |
| name         | No        | String  | Specifies the certificate name. The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                            |
| description  | No        | String  | Provides supplementary information about the certificate. The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                  |
| type         | No        | String  | Specifies the certificate type. The default value is <b>server</b> . The value can be: <ul style="list-style-type: none"><li>• <b>server</b>: indicates the server certificate.</li><li>• <b>client</b>: indicates the CA certificate.</li></ul>                                                                                                                                                                           |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain      | No        | String | <p>Specifies the domain name associated with the server certificate. The default value is <b>null</b>.</p> <p>The value contains a maximum of 100 characters.</p> <p>Value range:</p> <ul style="list-style-type: none"><li>• A common domain name contains 0 to 100 characters and consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit.</li><li>• In addition to the requirements for common domain names, a wildcard domain name can start with an asterisk (*). This parameter takes effect only when <b>type</b> is set to <b>server</b>.</li></ul> |
| create_time | No        | String | <p>Specifies the time when the certificate was created.</p> <p>The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| update_time | No        | String | <p>Specifies the time when the certificate was updated.</p> <p>The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| source      | No        | String | <p>Specifies the source of the certificate. The default value is <b>null</b>.</p> <p>Constraints: If <b>scm_certificate_id</b> is not left blank and <b>source</b> is not specified, the default value is <b>scm</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

| Parameter         | Mandator<br>y | Type   | Description                                                                                                                                                                                                                                                                                                                                   |
|-------------------|---------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_status | No            | String | Specifies the protection status.<br>The value can be: <ul style="list-style-type: none"><li>• <b>nonProtection</b>: The load balancer is not protected.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> Default value: <b>nonProtection</b> |
| protection_reason | No            | String | Specifies why the modification protection is enabled.<br><b>NOTE</b><br>This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .                                                                                                                                                                       |

Request

None

Response

Table 6-214 Response parameters

| Parameter    | Type                                 | Description                                                            |
|--------------|--------------------------------------|------------------------------------------------------------------------|
| certificates | Array of <b>Certificates</b> objects | Lists the certificates. For details, see <a href="#">Table 6-215</a> . |
| instance_num | Integer                              | Specifies the number of certificates.                                  |

Table 6-215 certificates parameter description

| Parameter | Type   | Description                                                                                                       |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------|
| id        | String | Specifies the certificate ID.                                                                                     |
| tenant_id | String | Specifies the ID of the project where the certificate is used.<br>The value contains a maximum of 255 characters. |

| Parameter      | Type    | Description                                                                                                                                                                                                                                           |
|----------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | Specifies the administrative status of the certificate.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>         |
| name           | String  | Specifies the certificate name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                    |
| description    | String  | Provides supplementary information about the certificate.<br>The value contains a maximum of 255 characters.                                                                                                                                          |
| type           | String  | Specifies the certificate type.<br>The value can be: <ul style="list-style-type: none"><li>• <b>server</b>: indicates the server certificate.</li><li>• <b>client</b>: indicates the CA certificate.</li></ul>                                        |
| domain         | String  | Specifies the domain name associated with the server certificate.<br>The value contains a maximum of 100 characters.                                                                                                                                  |
| private_key    | String  | Specifies the private key of the server certificate in PEM format.                                                                                                                                                                                    |
| certificate    | String  | Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter <b>type</b> determines whether a public key or CA certificate is required. Both types of certificates are in PEM format. |
| expire_time    | String  | Specifies the time when the certificate expires.<br>The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format.                                                                                                                                             |
| create_time    | String  | Specifies the time when the certificate was created.<br>The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format.                                                                                                                                         |
| update_time    | String  | Specifies the time when the certificate was updated.<br>The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format.                                                                                                                                         |

| Parameter         | Type   | Description                                                                                                                                                                                                                                                                                                                                       |
|-------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| source            | String | Specifies the source of the certificate. The default value is <b>null</b> .<br><br>Constraints: If <b>scm_certificate_id</b> is not left blank and <b>source</b> is not specified, the default value is <b>scm</b> .                                                                                                                              |
| protection_status | String | Specifies the protection status.<br><br>The value can be: <ul style="list-style-type: none"><li>● <b>nonProtection</b>: The load balancer is not protected.</li><li>● <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> Default value: <b>nonProtection</b> |
| protection_reason | String | Specifies why the modification protection is enabled.                                                                                                                                                                                                                                                                                             |

## Example Request

- Request example 1: Querying all certificates  
GET https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/certificates
- Example 2: Querying a certificate whose ID is ef4d341365754a959556576501791b19 or ed40e8ea9957488ea82de025e35b74c0  
GET https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/certificates?id=ef4d341365754a959556576501791b19&id=ed40e8ea9957488ea82de025e35b74c0

## Example Response

- Example response 1

```
{
 "certificates": [
 {
 "certificate": "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgI CERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nb21wYW55IENBM4XDTE4MDcwMjEzMDU0N1oXDTQ1MTExNzEzMDU0N1owFDESMBAG
\nA1UEAwWJbG9jYWxob3N0MIIIBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAn0FQGi3ucTX
+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5\nU0NqPQZKUrZz3rQeLN9mYiUTJZPutYlFDDb
B8CtIgV+eyU9yYJslWx/
Bm5kWNPh9\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\nIAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/K
\nny09cxLKAFtgoZWQD2FAZJf9F7k1kYNwqITz3CPILZUUn7yw3nkOOTLMi28IEv0WY
\nYd7CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\nnhwQKuUvJhwr/AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBCwUA
\nA4IBAQA8IMQJxaTey7EjXtRLSVIEAMftAQP6GijNQUVlBQYUDauDT4W2XUz5wAn
\nnjiOyQ83va672K1G9s8n6xlH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
\nnezmczCwQYtHBMVQ4c7ML8554Ft1mWSt4dMAK2rzNYjvPRLYLzp1HMnI6hkjPk4PCZ
\nnwKnha0dlScati9CCt3UzXSNJOSLalKdHErH08lqd+1BchScxChk0xNITn1HZZGml\n
+vbmunok3A2luc14rnsrbkGYqxGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ\niYsGDVN
+9QBd0eYUHce+77s96i3l\n-----END CERTIFICATE-----",
 "create_time": "2017-02-25 09:35:27",
 "expire_time": "2045-11-17 13:25:47",
 "description": "description for certificate",
 }
]
}
```

```
 "domain": "www.elb.com",
 "id": "23ef9aad4ecb463580476d324a6c71af",
 "admin_state_up": true,
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "name": "https_certificate",
 "private_key":
"-----BEGIN PRIVATE KEY-----
\nMIIIEvgIBADANBgkqhkiG9w0BAQEFAASCBAgEAAoIBAQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetv4J+B7kYwsMhRcgdcJ8KCnX1nfzTvI2ksXITQ2o9Bkp5tnPe\ntB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lcq39buNpIgDOWzEP5AqzXt
\nCOFYn6RTH5SRug4hKNN7sT1eYMsIHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl\nnZAPYUBkl/
0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwlCRLU08k\nnEo04Z9H/
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\nfvCarftGgMaYWPSPNCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFgZjv5OQB
\nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
\nnciu9YklnNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6j9lc9M\nnEGpfYI6AdHlwFZCT/
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\nn7n8EzKRUNE6alMHOFEeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
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\nnIS6VjoTkF6r7VZolLX0fbuXh6lm8K8lQRfBpjff56p9pMwaBpDNDrfpHB5utBU
\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
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\nnXGAZZ1FQcb3KYa+2fllERmazedOTwjYZ0tGqZnXkEeMdSLkmlcRigWhGQKBgDak\nn/
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 "type": "server",
 "update_time": "2017-02-25 09:35:27",
 "source": "CCE",
 "protection_status": "consoleProtection",
 "protection_reason": "Note that the resource is created by the CCE. Modify the resource on
the CCE portal. Otherwise, services may be interrupted."
 }
},
 "instance_num": 1
}
```

- Example response 2

```
{
 "certificates": [
 {
 "description": "Push by SSL Certificate Manager",
 "domain": null,
 "id": "ed40e8ea9957488ea82de025e35b74c0",
 "name": "certForSonar9",
 "certificate": "-----BEGIN CERTIFICATE-----
MIIFCzCBHOGAwIBAgIQBIQycV3bWsVsCttv5rgRjANBgkqhkiG9w0BAQsFADBu
MQswCQYDVQQGEwJVUzEVMBMGA1UEChMMRGlnaUNlcnQgSW5jMRkwFwYDVQQLExB3
d3cuZGlnaWNlcnQuY29tMS0wKwYDVQQDEYRfBmNyeXB0aW9uEVZ2XJ5d2hlcmUg
RFYgVExTIENTBIC0gRzEwHhcNMjgwNzEwMDAwMDAwWhcNMjkwNzEwMDAwMDAwWjAU
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```



```

L2NhY2VydHMuzGlnaWNLcnQuY29tL0VUyJ35cHRpb25FdmVyeXdoZXJIRFZUTFND
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CZC0GFgUh7sTosxncAo8NZgE+RvfuON3zQ7IDdwQAAABZIOncLIAAAQDAEcwRQlh
AJX6gCXNggpDovfFdTzPzRy64TTrR/+b9QKKhY2EjBAIAWfG3BG2QK9tWvXpUn
lFadc0nvqmpDovabg5nmrMam2mQB2AlD1v+dzfPiMQ5lFvNu/1aNR1Y2/0q1YMG0
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-----END CERTIFICATE-----

-----BEGIN CERTIFICATE-----

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wFYCV6v6KdDxkbgGRLKsR4pucbJtbKqlkUGxuZi2t7pfewKRc5nWecvDBZF3+p1M
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BgNVHSMEGDAWgBQD3IA1VtFmDu2bwo+lbG80XsjRvzW3Xle8KIR6fFFhBAMCAYYw
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AQAwNAYIKwYBBQUHAQEEDAmMCQGCCsGAQUFBzABhhhodHRwOi8vb2Nzc5kaWdp
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-----END CERTIFICATE-----",

 "type": "server",
 "create_time": "2019-03-03 16:32:30",
 "private_key": "-----BEGIN RSA PRIVATE KEY-----

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E0B/p8j5iVQFQKZSiHcDAZVWw4sCgYEAJ7al/BcNzlcyn2mlhdh583b4/Ll+YCNmZ2
5eDHscZKmx8fLcjRpZE8dXagPqXmwjt6E1vDvQWP9m06VDNcThFHB+nO0tLmidSk
evmbScuiaTRmmbJf2lThY0hIqNsc7PgKF2DTklstEroHLDfE8ZGFN6f0PiDfMcdb
Ax6L5EMrcGYEA0+qhuQftKqKGdbXX9r3H8N0TVh27Byfl3kKVYy0dUJMvsOAq6d97
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L7s+4it+nIQY28416P3m2P1PhitzsM+HD2UCERBiYUdJrDKR8Q9G6GZoiFkY9Y=
-----END RSA PRIVATE KEY-----"

```

```
-----END RSA PRIVATE KEY-----
",
 "update_time": "2019-03-03 16:32:30",
 "admin_state_up": true,
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "expire_time": "2019-07-10 12:00:00",
 "source": "CCE",
 "protection_status": "consoleProtection",
 "protection_reason": "Note that the resource is created by the CCE. Modify the resource on
the CCE portal. Otherwise, services may be interrupted."
 },
 {
 "description": null,
 "domain": "www.elb.com",
 "id": "ef4d341365754a959556576501791b19",
 "name": "certificate_28b824c8bbe419992fb7974b2911c72",
 "certificate": "-----BEGIN CERTIFICATE-----
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BAYTAnh4MQswCQYDVQQLDAJ4eDELMAkGA1UEBwwCeHgxGTAXBgkqhkiG9w0BCQEW
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i1YhgnQbn5E0hz55OLu5jvOkKQjPCW+8Kg==
-----END CERTIFICATE-----",
 "type": "server",
 "create_time": "2018-09-28 03:00:47",
 "private_key": "-----BEGIN RSA PRIVATE KEY-----
MIIEowIBAAKCAQEAWZ5UJULAJw7p6FVwGRQRjFN2s8tZ/6LC3X82fajpVsYqF1x
qEuUDndDXVD09E4u83MS6HO6a3bIVQDp6/klnYldiE6Vp8HH5BSKaCWKVg8lGWg1
UM9wZFnlryi14KgmpIFmCu9nA8yV/6MZAe6RSDmb3iyNBmiZ8aZhGw2pl1YwR+15
MVqFFGB+7ExkziROI7L8CFCyCezK2/oOOvQsH1dzQ8z1JXWdg8/9Zx7Ktvgwu5PQ
M3cJtSHX6iBPokMU8Z8TugLLtQXKZOegwajwvQ5mf2DPkVgM08XAgALJcLigwD5
13koAdtJd5v+9irw+5LAuO3JclqwTwwy7u/YwwIDAQABAOIBACU9S5fjD9/jTMXA
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Nwwy3eA/9GJslvKiHc0rejdyPymaw9I8MA7NbXhAlrY7KpqDQyk6sx+aUTcy5lD
iMXLWdwXYHhJ/1HVOo603oZyiS6HZeYU089NDUCX+1Sji3e5Ke0gPVXEQcQ1O11/
rh24bMxmwZo4PKBWdcMBN5Zf/4ij9vrZE+ffzW7vGBO48A5lvZxWU2U5t/OZQRtN
1uLOHmMFa0FIF2aWbTVfwdUWAFsvAOKHj9Vv8BXOUwKOUUektDkfAlvrXmsFrO/H
yDeYYPkCgYEA/S55CBbR0sMXpSZ56uRn8JHApZJhgkgyr+FqDUq/e92nAzf01P
RoEBUajwrmf1yceN/SDfbtWzq2XJGqhWdJmtpO16b7KBsC6BdRcH6dnOYh3jgA
vABMIP3wzI4zSVTyxRE8LDuboytF1mSCeV5tHYPQTZNwrplDnLQhywcCgYEAw8Yc
Uk/eiFr3hfH/ZohMfv5p82Qp7DNIGRzw8YtVG/3+vNXrAXW1VhugNhQY6L+zLJC
aKn84ooup0m3YCG0hvlNqluvzfsuzQgtjTXyaE0cEwsjUusOmiuj09vVx/3U7siK
Hdj2ICPCvQ6Q8tdi8jV320gMs05AtaBkZdsiWUCgYEAtLw4Kk4f+xTKDFsrLUNf
75wcqhWVBiwBp7yQ7UX4EYsJPKZcHMRTk0EEcAbpyaJZE3I44vjP5ReXIHNLMfPs
uvl34J4Rfot0LN3n7cFrAi2+wpNo+MOBwrNzPmijGP2uKKrQ4JiMjFbKV/6utGF
Up7VxfwS904JYpqGaZctilECgYA1A6nZtF0riY6ry/uAdXpZHL8ONNqRZtWoT0kD
79otSVu5ISiRbaGcXsDExC52oKrSDAgFtbqQUiEOFG09UxfoR6HwRkba2CiDwve
yHQLQI5Qrdxz8Mk0glrNrSM4FamcW9vi9z4kCbQyoC5C+4gqeUURpDlkQBWP2Y4
2ct/bQKBgHv8qCsQTZphOxc31BJPa2xVhuv18cEU3XLURVfUZ/1f43jhLp7gynS2
ep++LkUi9D0VGXY8bqvJjBECeU85vl8NpCXwe/LoVoln+7KaVIZMwqoGMfmgNl
nEqm7HWKxHhf8A6En/ljleuddS1sf9e/x+TJN1Xhnt9W6pe7Fk1
-----END RSA PRIVATE KEY-----",
 "update_time": "2018-09-28 03:00:47",
 "admin_state_up": true,
```

```
"tenant_id": "601240b9c5c94059b63d484c92cfe308",
"expire_time": "2020-12-03 03:42:49",
"source": "CCE",
"protection_status": "consoleProtection",
"protection_reason": "Note that the resource is created by the CCE. Modify the resource on
the CCE portal. Otherwise, services may be interrupted."
}
],
"instance_num": 2
}
```

## Status Code

For details, see [Status Codes](#).

## 6.9.3 Querying Details of a Certificate

### Function

This API is used to query details about a certificate.

### Constraints

None

### URI

GET /v2/{project\_id}/elb/certificates/{certificate\_id}

**Table 6-216** Parameter description

| Parameter      | Mandatory | Type   | Description                   |
|----------------|-----------|--------|-------------------------------|
| project_id     | Yes       | String | Specifies the project ID.     |
| certificate_id | Yes       | String | Specifies the certificate ID. |

### Request

None

### Response

**Table 6-217** Parameter description

| Parameter | Type   | Description                   |
|-----------|--------|-------------------------------|
| id        | String | Specifies the certificate ID. |

| Parameter      | Type    | Description                                                                                                                                                                                                                                           |
|----------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id      | String  | Specifies the ID of the project where the certificate is used.<br>The value contains a maximum of 255 characters.                                                                                                                                     |
| admin_state_up | Boolean | Specifies the administrative status of the certificate.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>         |
| name           | String  | Specifies the certificate name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                    |
| description    | String  | Provides supplementary information about the certificate.<br>The value contains a maximum of 255 characters.                                                                                                                                          |
| type           | String  | Specifies the certificate type.<br>The value can be: <ul style="list-style-type: none"><li>• <b>server</b>: indicates the server certificate.</li><li>• <b>client</b>: indicates the CA certificate.</li></ul>                                        |
| domain         | String  | Specifies the domain name associated with the server certificate.<br>The value contains a maximum of 100 characters.                                                                                                                                  |
| private_key    | String  | Specifies the private key of the server certificate in PEM format.                                                                                                                                                                                    |
| certificate    | String  | Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter <b>type</b> determines whether a public key or CA certificate is required. Both types of certificates are in PEM format. |
| expire_time    | String  | Specifies the time when the certificate expires.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                             |
| create_time    | String  | Specifies the time when the certificate was created.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                         |

| Parameter         | Type   | Description                                                                                                                                                                                                                                                                                                                                   |
|-------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| update_time       | String | Specifies the time when the certificate was updated.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                 |
| source            | String | Specifies the source of the certificate. The default value is <b>null</b> .<br>Constraints: If <b>scm_certificate_id</b> is not left blank and <b>source</b> is not specified, the default value is <b>scm</b> .                                                                                                                              |
| protection_status | String | Specifies the protection status.<br>The value can be: <ul style="list-style-type: none"><li>● <b>nonProtection</b>: The load balancer is not protected.</li><li>● <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> Default value: <b>nonProtection</b> |
| protection_reason | String | Specifies why the modification protection is enabled.                                                                                                                                                                                                                                                                                         |

## Example Request

- Example request: Querying details of a certificate  
GET <https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/certificates/23ef9aad4ecb463580476d324a6c71af>

## Example Response

- Example response 1

```
{
 "certificate":
 "-----BEGIN CERTIFICATE-----
 \nMIIC4TCCAcmgAwIBAgI CERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
 \nb21wYW55IENBM4XDTE4MDcwMjEzMDU0N1oXDTQ1MTExNzEzMDU0N1owFDESMBAG
 \nA1UEAwwJbG9jYWxob3N0MIIlBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
 \n0FQGzi3ucTX+DNud1p/b4XVM6I3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5
 \nU0NqPQZKUrZz3rQeLN9mYiUTJZPutYIFDDbB8CtIgV+eyU9yYJslWx/Bm5kWNPh9
 \n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
 \nIAzlsx+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/K
 \ny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPILZUUn7yw3nkOOTLMI28IEv0Wy
 \nYd7CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
 \nhwQKuUvJhwr/AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBECwUA
 \nA4IBAQA8IMQJxaTey7EjXtRLSVIEAMftAQPG6jijNQyUvIBQYUDauDT4W2XU5wAn
 \njiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKI0dI9I5I98TGKI6OoDa
 \nezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRLYLzp1Hmnl6hkjPk4PCZ
 \nwKnhadlScati9Cct3UzXSNJOSLaKdHErH08lqd+1BchScxCfk0xNITn1HZZGml
 \n+vbmunok3A2luc14rnsrcbkGYqGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ
 \niYsGDVN+9QBd0eYUHce+77s96i3l
 \n-----END CERTIFICATE-----",
 "create_time": "2017-02-25 09:35:27",
 "expire_time": "2045-11-17 13:25:47",
 "description": "description for certificate",
```

```
"domain": "www.elb.com",
"id": "23ef9aad4ecb463580476d324a6c71af",
"tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
"admin_state_up": true,
"name": "https_certificate",
"private_key":
"-----BEGIN PRIVATE KEY-----
\nMIIIEvgIBADANBgkqhkiG9w0BAQEFAASCBAKggwggSkAgEAAoIBAQQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KCnX1nfzTvI2ksXITQ2o9BkpStnPe
\nntB4s32ZiJRMlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lcq39buNplgDOWzEP5AzqXt
\nCOFYn6RTH5SRug4hKNN7sT1eYMsLHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl
\nZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwlCRLU08k
\nEo04Z9H/AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\nnfVCArftGgMaYWPSPNCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFgZjv5OQB
\nnZvE4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
\nnciu9YklnNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
\nnEGpfYl6ADHlwFZcT/RNAXhP82lg2gUJ5gAu66FfDjMwQXKbafKdP3zq4Up8a7Ale
\nnkrguPtFv1vWklg+bUfhGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\nnXUqgCZo8MKev2jf2drlxRRwRL33SksQbzAQ/qRLd7GP3sCGqvKxWY2FPdFy8kx
\nnGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpp7dt
\nnJ7n8EzkRUNE6alMHOFEeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\nniWgTWHXPZxUQaYhpjXo6+IMl6DpExiDgBAkMzJGlvS7yQiyWU+wthArurbWYdGZ
\nnLS6VjoTkF6r7VZolLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
\nnxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
\nn1lVQhELG9CbKsdzKM71GyElmix/T7FnJSHIWlho1qVo6AQyduNWnAQD15pr8KAd
\nnXGXAZZ1FQcb3KYa+2fflERmazedOTWjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
\nn/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
\nnfl7FPMdvGl8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\nn7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9o
\nnjHjWB7pQlUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDJkxfciXKcsYr9lluk
\nnfaoXgjkR7p1zERIwZuFF635B4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd
\nn3fy+1rCUwzOp9LSjtYf4ege
\n-----END PRIVATE KEY-----",
"type": "server",
"update_time": "2017-02-25 09:35:27",
"source": "CCE",
"protection_status": "consoleProtection",
"protection_reason": "Note that the resource is created by the CCE. Modify the resource on the CCE
portal. Otherwise, services may be interrupted."
}
```

## Status Code

For details, see [Status Codes](#).

## 6.9.4 Updating a Certificate

### Function

This API is used to update a certificate.

### URI

PUT /v2/{project\_id}/elb/certificates/{certificate\_id}

**Table 6-218** Parameter description

| Parameter      | Mandatory | Type   | Description                   |
|----------------|-----------|--------|-------------------------------|
| project_id     | Yes       | String | Specifies the project ID.     |
| certificate_id | Yes       | String | Specifies the certificate ID. |

## Request

**Table 6-219** Parameter description

| Parameter      | Mandatory | Type    | Description                                                                                                                   |
|----------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | Specifies the administrative status of the certificate.<br>This parameter is reserved, and the default value is <b>true</b> . |
| name           | No        | String  | Specifies the certificate name.<br>The value contains a maximum of 255 characters.                                            |
| description    | No        | String  | Provides supplementary information about the certificate.<br>The value contains a maximum of 255 characters.                  |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain      | No        | String | <p>Specifies the domain name associated with the server certificate. The default value is <b>null</b>.</p> <p>The value contains a maximum of 100 characters.</p> <p>Value range:</p> <ul style="list-style-type: none"><li>• A common domain name contains 0 to 100 characters and consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit.</li><li>• In addition to the requirements for common domain names, a wildcard domain name can start with an asterisk (*). This parameter takes effect only when <b>type</b> is set to <b>server</b>.</li></ul> <p><b>NOTE</b><br/>This parameter takes effect only when <b>type</b> is set to <b>server</b>.</p> |
| private_key | No        | String | <p>Specifies the private key of the server certificate. The value must be PEM encoded.</p> <ul style="list-style-type: none"><li>• This parameter will be ignored if <b>type</b> is set to <b>client</b>. A CA server can still be created and used normally. This parameter will be left blank even if you enter a private key that is not PEM encoded.</li><li>• This parameter is mandatory only when <b>type</b> is set to <b>server</b>. If you enter an invalid private key, an error is returned.</li></ul>                                                                                                                                                                                                                                                                                      |
| certificate | No        | String | <p>Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter <b>type</b> determines whether a public key or CA certificate is required.</p> <p>Both types of certificates are in PEM format.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |



| Parameter         | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                   |
|-------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| source            | No        | String | Specifies the source of the certificate.<br>The default value is <b>null</b> .<br><br>Constraints: If <b>scm_certificate_id</b> is not left blank and <b>source</b> is not specified, the default value is <b>scm</b> .                                                                                                                       |
| protection_status | No        | String | Specifies the protection status.<br>The value can be: <ul style="list-style-type: none"><li>• <b>nonProtection</b>: The load balancer is not protected.</li><li>• <b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> Default value: <b>nonProtection</b> |
| protection_reason | No        | String | Specifies why the modification protection is enabled.<br><b>NOTE</b><br>This parameter is valid only when <b>protection_status</b> is set to <b>consoleProtection</b> .                                                                                                                                                                       |

## Response

**Table 6-220** Parameter description

| Parameter      | Type    | Description                                                                                                                                                                                                                                       |
|----------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the certificate ID.                                                                                                                                                                                                                     |
| tenant_id      | String  | Specifies the ID of the project where the certificate is used.<br><br>The value contains a maximum of 255 characters.                                                                                                                             |
| admin_state_up | Boolean | Specifies the administrative status of the certificate.<br><br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul> |
| name           | String  | Specifies the certificate name.<br><br>The value contains a maximum of 255 characters.                                                                                                                                                            |

| Parameter   | Type   | Description                                                                                                                                                                                                                                           |
|-------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description | String | Provides supplementary information about the certificate.<br>The value contains a maximum of 255 characters.                                                                                                                                          |
| type        | String | Specifies the certificate type.<br>The value can be: <ul style="list-style-type: none"><li>• <b>server</b>: indicates the server certificate.</li><li>• <b>client</b>: indicates the CA certificate.</li></ul>                                        |
| domain      | String | Specifies the domain name associated with the server certificate.<br>The value contains a maximum of 100 characters.                                                                                                                                  |
| private_key | String | Specifies the private key of the server certificate in PEM format.                                                                                                                                                                                    |
| certificate | String | Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter <b>type</b> determines whether a public key or CA certificate is required. Both types of certificates are in PEM format. |
| expire_time | String | Specifies the time when the certificate expires.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                             |
| create_time | String | Specifies the time when the certificate was created.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                         |
| update_time | String | Specifies the time when the certificate was updated.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                         |
| source      | String | Specifies the source of the certificate. The default value is <b>null</b> .<br>Constraints: If <b>scm_certificate_id</b> is not left blank and <b>source</b> is not specified, the default value is <b>scm</b> .                                      |

| Parameter         | Type   | Description                                                                                                                                                                                                                                                                                                                               |
|-------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protection_status | String | Specifies the protection status.<br>The value can be: <ul style="list-style-type: none"><li><b>nonProtection</b>: The load balancer is not protected.</li><li><b>consoleProtection</b>: Modification protection is enabled to avoid that resources are modified by accident on the console.</li></ul> Default value: <b>nonProtection</b> |
| protection_reason | String | Specifies why the modification protection is enabled.                                                                                                                                                                                                                                                                                     |

## Example Request

- Example request: Updating a certificate

PUT https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/certificates/  
23ef9aad4ecb463580476d324a6c71af

```
{
 "certificate":
 "-----BEGIN CERTIFICATE-----
 \nMIIC4TCCAcmgAwIBAgICEREWdQYJKoZIhvcNAQELBQAwFzEVMBMGGA1UEAxMMTXID
 \nb21wYW55IENBM4XDTE4MDcwMjEzMjU0N1oXDTQ1MTExNzEzMjU0N1owFDESMBAG
 \nA1UEAwJbG9jYWxob3N0MIIlBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
 \n0FQGzi3ucTX+DNud1p/b4XVM6I3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5
 \nU0NqPQZKUrZz3rQeLN9mYiUTJZPutYlFDDbB8CtIgV+eyU9yYJstWx/Bm5kWNPh9
 \n7B9Yu9pbp2u6zDA99IC4ekKD93KuzlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
 \nIAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/K
 \ny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPILZUUn7yw3nkOOtLMI28IEv0Wy
 \nYd7CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
 \nnhwQKuUvJhWR/AAABMBMGGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGQSIb3DQEBCwUA
 \nA4IBAQA8lMQJxaTey7EjXtRLSVIEAMftAQPG6jijNQuvIBQYUDauDT4W2XU5wAn
 \njiOyQ83va672K1G9s8n6xlH+xwwdSNnozaKzC87vwSeZKIodl9I5I98TGKI6OoDa
 \nezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNjYvPRLYLzp1HMnl6hkjPk4PCZ
 \nnwKnh0dlScati9CCt3UzXSNJOSLaKdHErH08lqd+1BchScxChk0xNITn1HZZGml
 \n+vbmunok3A2luc14rnsrckbGyqxGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ
 \niYsGDVN+9QBd0eYUHce+77s96i3l
 \n-----END CERTIFICATE-----",
 "description": "description for certificate",
 "domain": "www.elb.com",
 "name": "https_certificate",
 "private_key":
 "-----BEGIN PRIVATE KEY-----
 \nMIIIEvglBADANBgkqhkiG9w0BAQEFAASCBKggwggSkAgEAAoIBAQQDQVAbOLe5xNf4M
 \n253Wn9vhdUzojetv4J+B7kYwsMhRcgdcJ8KcN1nfzTvI2ksXITQ2o9BkpStnPe
 \nbtB4s32ZiJRMlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
 \nMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lcq39buNpIgDOWzEP5AzqXt
 \nnciu9YklNNEHu6uRJ5g/eGGX3KQynTvVIhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
 \nEGpfYI6AdHIwFZcT/RNAXhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7Ale
 \nkrgruPtFv1vWklg+bUfhGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
 \nXUqgCZ08MKev2jf2drLxRRwRL33SksQbzAQ/qrLdT7GP3sCGqvkvxWY2FPdFy8kx
 \nGcCeZPcleZYQCAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpiP7dt
 \nj7n8EzkRUNE6alMHOFEeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4LaR
 \niWgTWHXPZuXQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
```

```
\nIS6VjoTkF6r7VZoILXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
\n1lVQhELGI9CbKSdzKM71GyElmix/T7FnSHIWLho1qVo6AQyduNWnAQD15pr8KAd
\nXGXAZZ1FQcb3KYa+2fflERmazdOTWjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
\n/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
\nfl7FPMdvGl8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\n7nLhA4R4lqm9lpV6SKegDUK4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9o
\nHjWB7pQLUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDJkxfciXKcsYr9Iluk
\nfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd
\n3fy+1rCUwzOp9LSjtYf4ege
\n-----END PRIVATE KEY-----"
}
```

## Example Response

- Example response 1

```
{
 "certificate": "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgICEREWdQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMMTXID
\nb21wYW55IENBMB4XDTE4MDcwMjEzMDU0N1oXDTE4MTExNzEzMDU0N1owFDESMBAG
\nA1UEAwWJbG9jYWxob3N0MIIIBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAn0FQZi3ucTX
+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5\nu0U0NqPQZKUrZz3rQeLN9mYiUTJZPutYIFDDb
B8CtIgV+eyU9yYJslWx/
Bm5kWNPh9\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\nlAzlsD+QM6l7QjHwJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/K
\nny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPLZUUn7yw3nkOOTLMI28IEv0WY
\nYd7CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\n\nhWQKuUvJhW/AAABMBMGGA1UdJQQMMAoGCCsGAQUFBwMBMAoGCCsGSIb3DQEBChUA
\nA4IBAQA8IMQJxaTey7EjXtRSLVIEAMftAQPG6jijNQvIBQYUDauDT4W2XU25wAn
\n\njiOyQ83va672K1G9s8n6xlH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
\n\nnezmcCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRLYLzp1HMnl6hkjPk4PCZ
\n\nwKnha0dlScatI9Cct3UzXSNJOSLalKdHErH08lqd+1BchScxChk0xNItn1HZZGml\n
+vbmunok3A2luc14rnsrckbGYqXGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ\niYsGDVN
+9QBd0eYUHce+77s96i3\n-----END CERTIFICATE-----",
 "expire_time": "2045-11-17 13:25:47",
 "create_time": "2017-02-25 09:35:27",
 "update_time": "2017-02-25 09:38:27",
 "id": "23ef9aad4ecb463580476d324a6c71af",
 "description": "description for certificate",
 "domain": "www.elb.com",
 "type": "server",
 "admin_state_up": true,
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "name": "https_certificate",
 "private_key": "-----BEGIN PRIVATE KEY-----
\nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBAQgEAAoIBAQDQVAbOLe5Xnf4M
\n253Wn9vhdUzojetjv4j+B7kYwsMhRcgdcJ8KcnX1nf2Vl2ksXLTQ2o9BkpStnPntB4s32ZiRMLk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nMD30gH6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lCq39buNplgDOWZEP5AqzXt
\n\nCOFYn6RTH5SRug4hKNN7sT1eYMsLHu7wtEBDKVgrLJOce/W2f8rLT1zEsoAW2Ch\n\nZAPYUBkl/
0XUWTRG3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwLCRLU08k\nnEo04Z9H/
AgMBAAECCgEAEEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\n\nfvCARftGgMaYWPNSNCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFgZjv5OQB
\n\nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
\n\nnciu9YklNNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9l9m\n\nnEGpfYI6AdHlwFZcT/
RNAxpP82lg2gUJSgAu66FFDjMwQXKbafKdP3zq4Up8a7Ale\n\nnkrquPtfV1vWklg
+bUFhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\n\nXUqgCZ08MKeV2jf2drlxRRwRL33SksQbzAQ/qRLd7GP3sCGqvkvWY2FPdFYf8kx
\n\nGcCeZPcleZYQAM41pjtsaM8tVbLWVR8UtGBuQoPSPH7JNF3Tm/JH/fbwjpp7dt
\n\nJ7n8EzkRUNE6alMHOFeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9vT7mTgKYK4aLr
\n\nniWgTWHXPZuXQaYhpjXo6+IMI6DpExiDgBAKMzJGlvS7yQiYWU+wthAr9urbWYdGZ
\n\nIS6VjoTkF6r7VZoILXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
\n\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
\n\n1lVQhELGI9CbKSdzKM71GyElmix/T7FnSHIWLho1qVo6AQyduNWnAQD15pr8KAd
\n\nXGXAZZ1FQcb3KYa+2fflERmazdOTWjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak\n\n/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha\n\n\nfl7FPMdvGl8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\n\n7nLhA4R4lqm9lpV6SKegDUK4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9o
```

```
\njHjWB7pQlUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDJkxfciXKcsYr9Iluk
\nfaoXgjkR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd\n3fy
+1rCUwzOp9LSjtYf4ege\n-----END PRIVATE KEY-----"
}
```

## Status Code

For details, see [Status Codes](#).

## 6.9.5 Deleting a Certificate

### Function

This API is used to delete a certificate.

### Constraints

If the target certificate is used by a listener, the certificate cannot be deleted, and 409 code will be displayed.

### URI

DELETE /v2/{project\_id}/elb/certificates/{certificate\_id}

**Table 6-221** Parameter description

| Parameter      | Mandator<br>y | Type       | Description                   |
|----------------|---------------|------------|-------------------------------|
| project_id     | Yes           | Strin<br>g | Specifies the project ID.     |
| certificate_id | Yes           | Strin<br>g | Specifies the certificate ID. |

### Request

None

### Response

None

### Example Request

- Example request: Deleting a certificate  
DELETE https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/certificates/  
23ef9aad4ecb463580476d324a6c71af

### Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

# 7 APIs (OpenStack)

## 7.1 Tag

### 7.1.1 Adding a Tag to a Load Balancer

#### Function

This API is used to add a tag to a specific load balancer for easier management.

#### Constraints

A maximum of 20 tags can be added to a load balancer.

Note the following when you add tags:

- If there are duplicate keys in the request body, an error is reported.
- If there are no duplicate keys in the request body but the key in the request body exists in the database, the key in the database is overwritten.

#### URI

POST /v2.0/{project\_id}/loadbalancers/{loadbalancer\_id}/tags

**Table 7-1** Parameter description

| Parameter       | Mandator<br>y | Type   | Description                                                          |
|-----------------|---------------|--------|----------------------------------------------------------------------|
| project_id      | Yes           | String | Specifies the ID of the project where the tag is used.               |
| loadbalancer_id | Yes           | String | Specifies the ID of the load balancer to which a tag is to be added. |

## Request Parameters

**Table 7-2** Request header parameters

| Parameter    | Mandatory | Type   | Description |
|--------------|-----------|--------|-------------|
| X-Auth-Token | Yes       | String | User token  |

**Table 7-3** Parameter description

| Parameter | Mandatory | Type   | Description                                                     |
|-----------|-----------|--------|-----------------------------------------------------------------|
| tag       | Yes       | Object | Specifies the tag. For details, see <a href="#">Table 7-4</a> . |

**Table 7-4** tag parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                         |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | Specifies the tag key. <ul style="list-style-type: none"><li>• Cannot be left blank.</li><li>• Can contain a maximum of 128 characters.</li><li>• Can contain letters, digits, underscores (_), and hyphens (-).</li><li>• The tag key of a load balancer must be unique.</li></ul> |
| value     | Yes       | String | Specifies the tag value. <ul style="list-style-type: none"><li>• Can contain a maximum of 255 characters.</li><li>• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li></ul>                                                                           |

## Response Parameters

None

## Example Request

- Example request  
POST <https://{{Endpoint}}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/7add33ad-11dc-4ab9-a50f-419703f13163/tags>

```
{
 "tag": {
 "key": "key1",
 "value": "value1"
 }
}
```



```
}
}
```

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

## 7.1.2 Batch Adding Load Balancer Tags

### Function

This API is used to batch add tags to a load balancer.

### Constraints

A maximum of 20 tags can be added to a listener.

This API is idempotent.

- Note the following when you add tags:
  - If there are duplicate keys in the request body, an error is reported.
  - If there are no duplicate keys in the request body but the key in the request body exists in the database, the key in the database is overwritten.
  - The value of **action** must be **create**.

### URI

POST /v2.0/{project\_id}/loadbalancers/{loadbalancer\_id}/tags/action

**Table 7-5** Parameter description

| Parameter       | Mandatory | Type   | Description                                                          |
|-----------------|-----------|--------|----------------------------------------------------------------------|
| project_id      | Yes       | String | Specifies the ID of the project where the tag is used.               |
| loadbalancer_id | Yes       | String | Specifies the ID of the load balancer to which a tag is to be added. |

## Request Parameters

**Table 7-6** Request header parameters

| Parameter    | Mandatory | Type   | Description |
|--------------|-----------|--------|-------------|
| X-Auth-Token | Yes       | String | User token  |

**Table 7-7** Parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                           |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tags      | Yes       | Array  | Lists the tags. For details, see <a href="#">Table 7-8</a> .                                                                                                          |
| action    | Yes       | String | Specifies the operation type. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>create</b>: adds tags to the load balancer.</li></ul> |

**Table 7-8** tags parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                         |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | Specifies the tag key. <ul style="list-style-type: none"><li>• Cannot be left blank.</li><li>• Can contain a maximum of 128 characters.</li><li>• Can contain letters, digits, underscores (_), and hyphens (-).</li><li>• The tag key of a load balancer must be unique.</li></ul> |
| value     | Yes       | String | Specifies the tag value. <ul style="list-style-type: none"><li>• Can contain a maximum of 255 characters.</li><li>• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li></ul>                                                                           |

## Response Parameters

None

## Example Request

- Example request  
POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/7add33ad-11dc-4ab9-a50f-419703f13163/tags/action  

```
{
 "action": "create",
 "tags": [
 {
 "key": "key1",
 "value": "value1"
 },
 {
 "key": "key2",
 "value": "value2"
 }
]
}
```

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

## 7.1.3 Batch Deleting Load Balancer Tags

### Function

This API is used to batch delete tags from a load balancer.

### Constraints

A maximum of 20 tags can be added to a listener.

This API is idempotent.

- Note the following when you delete the tags:
  - If the tag does not exist, the deletion is considered successful by default.
  - The value range of the tag character set is not verified.
  - The tag structure body cannot be missing, and the key cannot be left blank or set to an empty string.
  - The value of **action** must be **delete**.

### URI

POST /v2.0/{project\_id}/loadbalancers/{loadbalancer\_id}/tags/action

**Table 7-9** Parameter description

| Parameter       | Mandatory | Type   | Description                                                              |
|-----------------|-----------|--------|--------------------------------------------------------------------------|
| project_id      | Yes       | String | Specifies the ID of the project where the tag is used.                   |
| loadbalancer_id | Yes       | String | Specifies the ID of the load balancer from which a tag is to be deleted. |

## Request Parameters

**Table 7-10** Request header parameters

| Parameter    | Mandatory | Type   | Description               |
|--------------|-----------|--------|---------------------------|
| X-Auth-Token | Yes       | String | Specifies the user token. |

**Table 7-11** Request parameters

| Parameter | Mandatory | Type   | Description                                                                                                                                           |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| tags      | Yes       | Array  | Specifies the tags. For details, see <a href="#">Table 7-12</a> .                                                                                     |
| action    | Yes       | String | Specifies the operation type. The value can be: <ul style="list-style-type: none"><li>• <b>delete</b>: deletes tags from the load balancer.</li></ul> |

Table 7-12 Parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                              |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | Specifies the tag name. The tag: <ul style="list-style-type: none"><li>• Cannot be left blank.</li><li>• Can contain a maximum of 128 characters.</li><li>• Can contain letters, digits, underscores (_), and hyphens (-).</li><li>• Cannot have the same key with other tags added to the same load balancer.</li></ul> |
| value     | Yes       | String | Specifies the tag value. The value: <ul style="list-style-type: none"><li>• Can contain a maximum of 255 characters.</li><li>• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li></ul>                                                                                                     |

Response Parameters

None

Example Request

- Example request  
POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/7add33ad-11dc-4ab9-a50f-419703f13163/tags/action  

```
{
 "action": "delete",
 "tags": [
 {
 "key": "key1",
 "value": "value1"
 },
 {
 "key": "key2",
 "value": "value2"
 }
]
}
```

Example Response

- Example response  
None

Status Code

For details, see [Status Codes](#).

## 7.1.4 Querying All Tags of a Load Balancer

### Function

This API is used to query all the tags of one load balancer.

### URI

GET /v2.0/{project\_id}/loadbalancers/{loadbalancer\_id}/tags

**Table 7-13** Parameter description

| Parameter       | Mandatory | Type   | Description                                                         |
|-----------------|-----------|--------|---------------------------------------------------------------------|
| project_id      | Yes       | String | Specifies the ID of the project where the tag is used.              |
| loadbalancer_id | Yes       | String | Specifies the ID of the load balancer whose tags are to be queried. |

### Request Parameters

**Table 7-14** Request header parameters

| Parameter    | Mandatory | Type   | Description |
|--------------|-----------|--------|-------------|
| X-Auth-Token | Yes       | String | User token  |

### Response Parameters

**Table 7-15** Response parameters

| Parameter | Type  | Description                                                   |
|-----------|-------|---------------------------------------------------------------|
| tags      | Array | Lists the tags. For details, see <a href="#">Table 7-16</a> . |

Table 7-16 tags parameter description

| Parameter | Type   | Description                                                                                                                                                                                                                                                                         |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | Specifies the tag key. <ul style="list-style-type: none"><li>• Cannot be left blank.</li><li>• Can contain a maximum of 128 characters.</li><li>• Can contain letters, digits, underscores (_), and hyphens (-).</li><li>• The tag key of a load balancer must be unique.</li></ul> |
| value     | String | Specifies the tag value. <ul style="list-style-type: none"><li>• Can contain a maximum of 255 characters.</li><li>• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li></ul>                                                                           |

Example Request

- Example request  
GET https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/7add33ad-11dc-4ab9-a50f-419703f13163/tags

Example Response

- Example response

```
{
 "tags": [
 {
 "key": "key1",
 "value": "value1"
 },
 {
 "key": "key2",
 "value": "value2"
 }
]
}
```

Status Code

For details, see [Status Codes](#).

7.1.5 Querying the Tags of All Load Balancers

Function

This API is used to query the tags of all the load balancers.

URI

GET /v2.0/{project\_id}/loadbalancers/tags

**Table 7-17** Parameter description

| Parameter  | Mandatory | Type   | Description                                            |
|------------|-----------|--------|--------------------------------------------------------|
| project_id | Yes       | String | Specifies the ID of the project where the tag is used. |

## Request Parameters

**Table 7-18** Request header parameters

| Parameter    | Mandatory | Type   | Description |
|--------------|-----------|--------|-------------|
| X-Auth-Token | Yes       | String | User token  |

## Response Parameters

**Table 7-19** Response parameters

| Parameter | Type  | Description                                                   |
|-----------|-------|---------------------------------------------------------------|
| tags      | Array | Lists the tags. For details, see <a href="#">Table 7-20</a> . |

**Table 7-20** tags parameter description

| Parameter | Type   | Description                                                                                                                                                                                                                                                                         |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | Specifies the tag key. <ul style="list-style-type: none"><li>• Cannot be left blank.</li><li>• Can contain a maximum of 128 characters.</li><li>• Can contain letters, digits, underscores (_), and hyphens (-).</li><li>• The tag key of a load balancer must be unique.</li></ul> |
| values    | Array  | Lists the tag values. <ul style="list-style-type: none"><li>• Can contain a maximum of 255 characters.</li><li>• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li></ul>                                                                              |



### Example Request

- Example request  
GET https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/tags

### Example Response

- Example response

```
{
 "tags": [
 {
 "key": "key1",
 "values": [
 "value1",
 "value2"
]
 },
 {
 "key": "key2",
 "values": [
 "value1",
 "value2"
]
 }
]
}
```

### Status Code

For details, see [Status Codes](#).

## 7.1.6 Querying Load Balancers by Tag

### Function

This API is used to query load balancers using tags.

### Constraints

None

### URI

POST /v2.0/{project\_id}/loadbalancers/resource\_instances/action

**Table 7-21** Parameter description

| Parameter  | Mandator<br>y | Type   | Description                                            |
|------------|---------------|--------|--------------------------------------------------------|
| project_id | Yes           | String | Specifies the ID of the project where the tag is used. |

## Request Parameters

**Table 7-22** Request header parameters

| Parameter    | Mandatory | Type   | Description |
|--------------|-----------|--------|-------------|
| X-Auth-Token | Yes       | String | User token  |

**Table 7-23** Parameter description

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|-----------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tags      | No        | Array   | <p>Specifies the included tags. A maximum of 20 keys are allowed for each query operation, and each key can have a maximum of 20 values.</p> <p>The tag key cannot be left blank or set to an empty string.</p> <p>Each tag key and each tag value of the same tag key must be unique.</p> <p>For details, see <a href="#">Table 7-24</a>.</p>                                                                                                                                                                                                                             |
| limit     | No        | Integer | <p>Sets the page size. This parameter is available when <b>action</b> is set to <b>filter</b>. Both the default value and maximum value are <b>1000</b>, and the minimum value is <b>1</b>. The value cannot be a negative integer.</p>                                                                                                                                                                                                                                                                                                                                    |
| offset    | No        | Integer | <p>Specifies the index position. The query starts from the next load balancer indexed by this parameter. This parameter is not required when you query load balancers on the first page. The value in the response returned for querying the load balancers on the previous page will be included in this parameter for querying the load balancers on subsequent pages. This parameter is not available when <b>action</b> is set to <b>count</b>. If <b>action</b> is set to <b>filter</b>, the value must be a positive integer, and the default value is <b>0</b>.</p> |
| action    | Yes       | String  | <p>Identifies the operation. The value can be <b>filter</b> or <b>count</b>.</p> <p><b>filter</b>: indicates pagination query.</p> <p><b>count</b>: indicates that all load balancers meeting the search criteria will be returned.</p>                                                                                                                                                                                                                                                                                                                                    |

| Parameter | Mandatory | Type  | Description                                                                                                                                                                                                                                            |
|-----------|-----------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| matches   | No        | Array | Specifies the search criteria. The tag key is the parameter to match, for example, <b>resource_name</b> . <b>value</b> indicates the value of the match content. The key is a fixed dictionary value.<br>For details, see <a href="#">Table 7-25</a> . |

**Table 7-24 tags** parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                  |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | Specifies the tag key. It contains a maximum of 128 Unicode characters and cannot be left blank. (This parameter is not verified in the search process.)                                                                                                                                                                     |
| values    | Yes       | Array  | Lists the tag values. Each tag value can contain a maximum of 255 Unicode characters. The values are in the OR relationship.<br><br>If no tag values in the list, the tag key is used for full search. If each value in the list starts with an asterisk (*), fuzzy match is performed based on the part after the asterisk. |

**Table 7-25 matches** parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                              |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | Specifies the tag key for match.<br>The value can be one of the following: <ul style="list-style-type: none"><li>• <b>resource_name</b>: indicates the resource name.</li><li>• <b>resource_id</b>: indicates the resource ID.</li></ul> |
| value     | Yes       | String | Specifies the tag value for match. Each tag value can contain a maximum of 255 Unicode characters.                                                                                                                                       |

## Response Parameters

**Table 7-26** Response parameters

| Parameter   | Type    | Description                                                             |
|-------------|---------|-------------------------------------------------------------------------|
| resources   | Array   | Lists the load balancers. For details, see <a href="#">Table 7-27</a> . |
| total_count | Integer | Specifies the total number of queried records.                          |

**Table 7-27** resource parameter description

| Parameter         | Type   | Description                                                                                                             |
|-------------------|--------|-------------------------------------------------------------------------------------------------------------------------|
| resource_id       | String | Specifies the resource ID.                                                                                              |
| resource_detail   | String | Specifies the resource details. The value is a resource object, used for extension. The value is left blank by default. |
| tags              | Array  | Lists the tags. If there is no tag, an empty array is used by default. For details, see <a href="#">Table 7-28</a> .    |
| resource_name     | String | Specifies the resource name. This parameter is an empty string by default if there is no resource name.                 |
| super_resource_id | String | Specifies the parent resource ID.                                                                                       |

**Table 7-28** tags parameter description

| Parameter | Type   | Description                                                                                                                                              |
|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | Specifies the tag key. It contains a maximum of 128 Unicode characters and cannot be left blank. (This parameter is not verified in the search process.) |
| value     | String | Specifies the tag value. Each tag value can contain a maximum of 255 Unicode characters.                                                                 |

## Example Request

- Example request 1 (when **action** is set to **filter**)  
POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/resource\_instances/action

```
{
 "offset": "100",
 "limit": "100",
 "action": "filter",
 "matches": [
 {
 "key": "resource_name",
 "value": "resource1"
 }
],
 "tags": [
 {
 "key": "key1",
 "values": [
 "value1",
 "value2"
]
 }
]
}
```

- Example request 2 (when **action** is set to **count**)

POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/resource\_instances/action

```
{
 "action": "count",
 "tags": [
 {
 "key": "key1",
 "values": [
 "value1",
 "value2"
]
 },
 {
 "key": "key2",
 "values": [
 "value1",
 "value2"
]
 }
],
 "matches": [
 {
 "key": "resource_name",
 "value": "resource1"
 }
]
}
```

## Example Response

- Example response 1

```
{
 "resources": [
 {
 "resource_detail": "",
 "resource_id": "154d135b-3a89-4e89-8023-06efb9acdc05",
 "resource_name": "resource1",
 "tags": [
 {
 "key": "key1",
 "value": "value1"
 },
 {
 "key": "key2",
 "value": "value1"
 }
]
 }
]
}
```

```
 }
]
},
"total_count": 1000
}
```

- Example response 2

```
{
 "total_count": 1000
}
```

### Status Code

For details, see [Status Codes](#).

## 7.1.7 Deleting a Tag from a Load Balancer

### Function

This API is used to delete a tag with a specific key from a load balancer.

### Constraints

None

### URI

DELETE /v2.0/{project\_id}/loadbalancers/{loadbalancer\_id}/tags/{key}

**Table 7-29** Parameter description

| Parameter       | Mandatory | Type   | Description                                                              |
|-----------------|-----------|--------|--------------------------------------------------------------------------|
| project_id      | Yes       | String | Specifies the ID of the project where the tag is used.                   |
| loadbalancer_id | Yes       | String | Specifies the ID of the load balancer from which a tag is to be deleted. |

### Request Parameters

**Table 7-30** Request header parameters

| Parameter    | Mandatory | Type   | Description |
|--------------|-----------|--------|-------------|
| X-Auth-Token | Yes       | String | User token  |

### Response Parameters

None

## Example Request

- Example request  
DELETE https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/  
7add33ad-11dc-4ab9-a50f-419703f13163/tags/key1

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

## 7.1.8 Adding a Tag to a Listener

### Function

This API is used to add a tag to a specific listener.

### Constraints

- A maximum of 20 tags can be added to a load balancer.
- Note the following when you add tags:
  - If there are duplicate keys in the request body, an error is reported.
  - If there are no duplicate keys in the request body but the key in the request body exists in the database, the key in the database is overwritten.

### URI

POST /v2.0/{project\_id}/listeners/{listener\_id}/tags

**Table 7-31** Parameter description

| Parameter   | Mandatory | Type   | Description                                                     |
|-------------|-----------|--------|-----------------------------------------------------------------|
| project_id  | Yes       | String | Specifies the ID of the project where the tag is used.          |
| listener_id | Yes       | String | Specifies the ID of the listener to which a tag is to be added. |

## Request Parameters

**Table 7-32** Request header parameters

| Parameter    | Mandatory | Type   | Description |
|--------------|-----------|--------|-------------|
| X-Auth-Token | Yes       | String | User token  |

**Table 7-33** Parameter description

| Parameter | Mandatory | Type   | Description                                                      |
|-----------|-----------|--------|------------------------------------------------------------------|
| tag       | Yes       | Object | Specifies the tag. For details, see <a href="#">Table 7-34</a> . |

**Table 7-34** tag parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                    |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | Specifies the tag key. <ul style="list-style-type: none"><li>• Cannot be left blank.</li><li>• Can contain a maximum of 128 characters.</li><li>• Can contain letters, digits, underscores (_), and hyphens (-).</li><li>• The tag key of a listener must be unique.</li></ul> |
| value     | Yes       | String | Specifies the tag value. <ul style="list-style-type: none"><li>• Can contain a maximum of 255 characters.</li><li>• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li></ul>                                                                      |

## Response Parameters

None

## Example Request

- Example request  
POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/  
7add33ad-11dc-4ab9-a50f-419703f13163/tags  

```
{
 "tag": {
 "key": "key1",
 "value": "value1"
 }
}
```



## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

## 7.1.9 Batch Adding Tags to a Listener

### Function

This API is used to batch add tags to a listener.

### Constraints

- A maximum of 20 tags can be added to a listener.
- This API is idempotent.
- Note the following when you add tags:
  - If there are duplicate keys in the request body, an error is reported.
  - If there are no duplicate keys in the request body but the key in the request body exists in the database, the key in the database is overwritten.
  - The value of **action** must be **create**.

### URI

POST /v2.0/{project\_id}/listeners/{listener\_id}/tags/action

**Table 7-35** Parameter description

| Parameter   | Mandatory | Type   | Description                                                     |
|-------------|-----------|--------|-----------------------------------------------------------------|
| project_id  | Yes       | String | Specifies the ID of the project where the tag is used.          |
| listener_id | Yes       | String | Specifies the ID of the listener to which tags are to be added. |

### Request Parameters

**Table 7-36** Request header parameters

| Parameter    | Mandatory | Type   | Description |
|--------------|-----------|--------|-------------|
| X-Auth-Token | Yes       | String | User token  |

**Table 7-37** Parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                               |
|-----------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tags      | Yes       | Array  | Lists the tags. For details, see <a href="#">Table 7-38</a> .                                                                                                             |
| action    | Yes       | String | Specifies the operation identifier.<br>The value can be one of the following: <ul style="list-style-type: none"><li>● <b>create</b>: adds tags to the listener.</li></ul> |

**Table 7-38** resource\_tag parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                    |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | Specifies the tag key. <ul style="list-style-type: none"><li>● Cannot be left blank.</li><li>● Can contain a maximum of 128 characters.</li><li>● Can contain letters, digits, underscores (_), and hyphens (-).</li><li>● The tag key of a listener must be unique.</li></ul> |
| value     | Yes       | String | Specifies the tag value. <ul style="list-style-type: none"><li>● Can contain a maximum of 255 characters.</li><li>● Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li></ul>                                                                      |

## Response Parameters

None

## Example Request

- Example request  
POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/7add33ad-11dc-4ab9-a50f-419703f13163/tags/action  

```
{
 "action": "create",
 "tags": [
```

```
{
 {
 "key": "key1",
 "value": "value1"
 },
 {
 "key": "key2",
 "value": "value2"
 }
}
```

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

## 7.1.10 Batch Deleting Tags from a Listener

### Function

This API is used to batch delete tags from a listener.

### Constraints

- A maximum of 20 tags can be added to a listener.
- This API is idempotent.
- Note the following when you delete tags:
  - If the tag to be deleted does not exist, the deletion is considered successful by default.
  - The value range of the tag character set is not verified.
  - The tag structure body cannot be missing, and the key cannot be left blank or set to an empty string.
  - The value of **action** must be **delete**.

### URI

POST /v2.0/{project\_id}/listeners/{listener\_id}/tags/action

**Table 7-39** Parameter description

| Parameter   | Mandator<br>y | Type   | Description                                                         |
|-------------|---------------|--------|---------------------------------------------------------------------|
| project_id  | Yes           | String | Specifies the ID of the project where the tag is used.              |
| listener_id | Yes           | String | Specifies the ID of the listener from which a tag is to be deleted. |

## Request Parameters

**Table 7-40** Request header parameters

| Parameter    | Mandatory | Type   | Description               |
|--------------|-----------|--------|---------------------------|
| X-Auth-Token | Yes       | String | Specifies the user token. |

**Table 7-41** Request parameters

| Parameter | Mandatory | Type   | Description                                                                                                                                                    |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tags      | Yes       | Array  | Specifies the tags. For details, see <a href="#">Table 7-42</a> .                                                                                              |
| action    | Yes       | String | Specifies the operation identifier.<br>The value can be: <ul style="list-style-type: none"><li>• <b>delete</b>: deletes tags from the load balancer.</li></ul> |

**Table 7-42** resource\_tag parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                              |
|-----------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | Specifies the tag name. The tag: <ul style="list-style-type: none"><li>• Cannot be left blank.</li><li>• Can contain a maximum of 128 characters.</li><li>• Can contain letters, digits, underscores (_), and hyphens (-).</li><li>• Cannot have the same key with other tags added to the same load balancer.</li></ul> |
| value     | Yes       | String | Specifies the tag value. The value: <ul style="list-style-type: none"><li>• Can contain a maximum of 255 characters.</li><li>• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li></ul>                                                                                                     |

## Response Parameters

None

## Example Request

- Example request  
POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/7add33ad-11dc-4ab9-a50f-419703f13163/tags/action

```
{
 "action": "delete",
 "tags": [
 {
 "key": "key1",
 "value": "value1"
 },
 {
 "key": "key2",
 "value": "value2"
 }
]
}
```

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

# 7.1.11 Querying All Tags of a Listener

## Function

This API is used to query all tags of one listener.

## Constraints

None

## URI

GET /v2.0/{project\_id}/listeners/{listener\_id}/tags

**Table 7-43** Parameter description

| Parameter  | Mandator<br>y | Type   | Description                                            |
|------------|---------------|--------|--------------------------------------------------------|
| project_id | Yes           | String | Specifies the ID of the project where the tag is used. |

| Parameter   | Mandatory | Type   | Description                                                    |
|-------------|-----------|--------|----------------------------------------------------------------|
| listener_id | Yes       | String | Specifies the ID of the listener whose tags are to be queried. |

## Request Parameters

**Table 7-44** Request header parameters

| Parameter    | Mandatory | Type   | Description |
|--------------|-----------|--------|-------------|
| X-Auth-Token | Yes       | String | User token  |

## Response Parameters

**Table 7-45** Response parameters

| Parameter | Type  | Description                                                   |
|-----------|-------|---------------------------------------------------------------|
| tags      | Array | Lists the tags. For details, see <a href="#">Table 7-46</a> . |

**Table 7-46** tags parameter description

| Parameter | Type   | Description                                                                                                                                                                                                                                                                    |
|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | Specifies the tag key. <ul style="list-style-type: none"><li>• Cannot be left blank.</li><li>• Can contain a maximum of 128 characters.</li><li>• Can contain letters, digits, underscores (_), and hyphens (-).</li><li>• The tag key of a listener must be unique.</li></ul> |
| value     | String | Specifies the tag value. <ul style="list-style-type: none"><li>• Can contain a maximum of 255 characters.</li><li>• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li></ul>                                                                      |

### Example Request

- Example request  
GET https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/7add33ad-11dc-4ab9-a50f-419703f13163/tags

### Example Response

- Example response

```
{
 "tags": [
 {
 "key": "key1",
 "value": "value1"
 },
 {
 "key": "key2",
 "value": "value2"
 }
]
}
```

### Status Code

For details, see [Status Codes](#).

## 7.1.12 Querying the Tags of All Listeners

### Function

This API is used to query the tags of all listeners.

### Constraints

None

### URI

GET /v2.0/{project\_id}/listeners/tags

**Table 7-47** Parameter description

| Parameter  | Mandator<br>y | Type   | Description                                            |
|------------|---------------|--------|--------------------------------------------------------|
| project_id | Yes           | String | Specifies the ID of the project where the tag is used. |

## Request Parameters

**Table 7-48** Request header parameters

| Parameter    | Mandatory | Type   | Description |
|--------------|-----------|--------|-------------|
| X-Auth-Token | Yes       | String | User token  |

## Response Parameters

**Table 7-49** Response parameters

| Parameter | Type  | Description                                                                                                                                                                                                                                                                                                                                                                              |
|-----------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tags      | Array | <p>Lists the tags, which are aggregated by the tag key. For details, see <a href="#">Table 7-50</a>.</p> <p>For example, if you have two listeners, the tag key of both listeners is "test", the tag value of listener A is "value1", and the tag value of listener B is "value2", two tags are queried, the key of both tags is "test", and the tag values are ["value1","value2"].</p> |

**Table 7-50** tags parameter description

| Parameter | Type   | Description                                                                                                                                                                                                                                                                           |
|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | <p>Specifies the tag key.</p> <ul style="list-style-type: none"><li>• Cannot be left blank.</li><li>• Can contain a maximum of 128 characters.</li><li>• Can contain letters, digits, underscores (_), and hyphens (-).</li><li>• The tag key of a listener must be unique.</li></ul> |
| values    | Array  | <p>Lists the tag values.</p> <ul style="list-style-type: none"><li>• Can contain a maximum of 255 characters.</li><li>• Can contain letters, digits, underscores (_), periods (.), and hyphens (-).</li></ul>                                                                         |



### Example Request

- Example request  
GET https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/tags

### Example Response

- Example response

```
{
 "tags": [
 {
 "key": "key1",
 "values": [
 "value1",
 "value2"
]
 },
 {
 "key": "key2",
 "values": [
 "value1",
 "value2"
]
 }
]
}
```

### Status Code

For details, see [Status Codes](#).

## 7.1.13 Querying Listeners by Tag

### Function

This API is used to query listeners by tag.

### Constraints

None

### URI

POST /v2.0/{project\_id}/listeners/resource\_instances/action

**Table 7-51** Parameter description

| Parameter  | Mandator<br>y | Type   | Description                                            |
|------------|---------------|--------|--------------------------------------------------------|
| project_id | Yes           | String | Specifies the ID of the project where the tag is used. |

## Request Parameters

**Table 7-52** Request header parameters

| Parameter    | Mandatory | Type   | Description |
|--------------|-----------|--------|-------------|
| X-Auth-Token | Yes       | String | User token  |

**Table 7-53** Parameter description

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tags      | No        | Array   | A maximum of 20 keys can be queried at a time, and each key can contain a maximum of 20 values. The structure body must be included. The tag key cannot be left blank or be an empty string. Each tag key and each tag value of the same tag key must be unique. For details, see <a href="#">Table 7-54</a> .                                                                                                                                                                                                                                     |
| limit     | No        | Integer | Sets the page size. This parameter is available when <b>action</b> is set to <b>filter</b> . Both the default value and maximum value are <b>1000</b> , and the minimum value is <b>1</b> . The value cannot be a negative integer.                                                                                                                                                                                                                                                                                                                |
| offset    | No        | Integer | Specifies the index position. The query starts from the next listener indexed by this parameter. This parameter is not required when you query listeners on the first page. The value in the response returned for querying the listeners on the previous page will be included in this parameter for querying the listeners on subsequent pages. This parameter is not available when <b>action</b> is set to <b>count</b> . If <b>action</b> is set to <b>filter</b> , the value must be a positive integer, and the default value is <b>0</b> . |
| action    | Yes       | String  | Identifies the operation. The value can be <b>filter</b> or <b>count</b> . <ul style="list-style-type: none"><li>• <b>filter</b>: indicates pagination query.</li><li>• <b>count</b>: indicates that all listeners meeting the search criteria will be returned.</li></ul>                                                                                                                                                                                                                                                                         |

| Parameter | Mandatory | Type  | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|-----------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| matches   | No        | Array | <p>Specifies the search criteria. The tag key is the parameter to match, for example, <b>resource_name</b>. <b>value</b> indicates the value of the match content. The key is a fixed dictionary value.</p> <p>Determine whether fuzzy match is required based on different parameters. For example, if the <b>key</b> is <b>resource_name</b>, fuzzy search is used by default. If <b>value</b> is an empty string, exact match is used. If the key is <b>resource_id</b>, exact match is used. For details, see <a href="#">Table 7-55</a>.</p> |

Table 7-54 tags parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                              |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | Specifies the tag key. It contains a maximum of 128 Unicode characters and cannot be left blank. (This parameter is not verified in the search process.) |
| values    | Yes       | Array  | Lists the tag values. Each tag value can contain a maximum of 255 Unicode characters. The values are in the OR relationship.                             |

Table 7-55 matches parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                               |
|-----------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | Yes       | String | <p>Specifies the tag key.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>resource_name</b>: indicates the resource name.</li><li>• <b>resource_id</b>: indicates the resource ID.</li></ul> |
| value     | Yes       | String | Specifies the tag value. Each tag value can contain a maximum of 255 Unicode characters.                                                                                                                                                  |

## Response Parameters

**Table 7-56** Response parameters

| Parameter   | Type    | Description                                                        |
|-------------|---------|--------------------------------------------------------------------|
| resources   | Array   | Lists the listeners. For details, see <a href="#">Table 7-57</a> . |
| total_count | Integer | Specifies the total number of queried records.                     |

**Table 7-57** resource parameter description

| Parameter         | Type   | Description                                                                                                             |
|-------------------|--------|-------------------------------------------------------------------------------------------------------------------------|
| resource_id       | String | Specifies the resource ID.                                                                                              |
| resource_detail   | String | Specifies the resource details. The value is a resource object, used for extension. The value is left blank by default. |
| tags              | Array  | Lists the tags. If there is no tag, an empty array is used by default. For details, see <a href="#">Table 7-58</a> .    |
| resource_name     | String | Specifies the resource name. This parameter is an empty string by default if there is no resource name.                 |
| super_resource_id | String | Specifies the parent resource ID.                                                                                       |

**Table 7-58** tags parameter description

| Parameter | Type   | Description                                                                                                                                              |
|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| key       | String | Specifies the tag key. It contains a maximum of 128 Unicode characters and cannot be left blank. (This parameter is not verified in the search process.) |
| value     | String | Specifies the tag value. Each tag value can contain a maximum of 255 Unicode characters.                                                                 |

## Example Request

- Example request 1 (when **action** is set to **filter**)  
POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/resource\_instances/  
action

```
{
 "offset": "100",
 "limit": "100",
 "action": "filter",
 "matches": [
 {
 "key": "resource_name",
 "value": "resource1"
 }
],
 "tags": [
 {
 "key": "key1",
 "values": [
 "value1",
 "value2"
]
 }
]
}
```

- Example request 2 (when **action** is set to **count**)

POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/resource\_instances/action

```
{
 "action": "count",
 "tags": [
 {
 "key": "key1",
 "values": [
 "value1",
 "value2"
]
 },
 {
 "key": "key2",
 "values": [
 "value1",
 "value2"
]
 }
],
 "matches": [
 {
 "key": "resource_name",
 "value": "resource1"
 }
]
}
```

## Example Response

- Example response 1

```
{
 "resources": [
 {
 "resource_detail": "",
 "resource_id": "154d135b-3a89-4e89-8023-06efb9acdc05",
 "resource_name": "resource1",
 "tags": [
 {
 "key": "key1",
 "value": "value1"
 },
 {
 "key": "key2",
 "value": "value1"
 }
]
 }
]
}
```

```
 }
]
}
],
"total_count": 1000
}
```

- Example response 2

```
{
 "total_count": 1000
}
```

### Status Code

For details, see [Status Codes](#).

## 7.1.14 Deleting a Tag from a Listener

### Function

This API is used to delete a tag with a specific key from a listener.

### Constraints

None

### URI

DELETE /v2.0/{project\_id}/listeners/{listener\_id}/tags/{key}

**Table 7-59** Parameter description

| Parameter   | Mandatory | Type   | Description                                                         |
|-------------|-----------|--------|---------------------------------------------------------------------|
| project_id  | Yes       | String | Specifies the ID of the project where the tag is used.              |
| listener_id | Yes       | String | Specifies the ID of the listener from which a tag is to be deleted. |

### Request Parameters

**Table 7-60** Request header parameters

| Parameter    | Mandatory | Type   | Description |
|--------------|-----------|--------|-------------|
| X-Auth-Token | Yes       | String | User token  |

### Response Parameters

None

## Example Request

- Example request  
DELETE https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/  
7add33ad-11dc-4ab9-a50f-419703f13163/tags/key1

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

### 7.1.15 Status Codes

**Table 7-61** Normal codes

| Status Code | Message    | Description                                                                                                                                     |
|-------------|------------|-------------------------------------------------------------------------------------------------------------------------------------------------|
| 200         | OK         | Specifies the normal response code for the GET operation.<br>This code is returned when a response body is returned for the POST operation.     |
| 204         | No Content | Specifies the normal response code for the DELETE operation.<br>This code is returned when no response body is returned for the POST operation. |

**Table 7-62** Error codes

| Status Code | Error Code | Description             | Error Message                                     | Measure                                                                    |
|-------------|------------|-------------------------|---------------------------------------------------|----------------------------------------------------------------------------|
| 400         | VPC.1801   | The ID is incorrect.    | resource id is invalid/<br>Getting id is invalid. | Use a correct resource ID.                                                 |
| 400         | VPC.1801   | An action error occurs. | action is invalid.                                | Ensure that the value of <b>action</b> is <b>create</b> or <b>delete</b> . |

| Status Code | Error Code | Description                                                                    | Error Message                                                                           | Measure                                                                                     |
|-------------|------------|--------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| 400         | VPC.1801   | The key length is invalid.                                                     | Tag length is invalid. The key length must be in range [1,36] and value in range [0,43] | Input a valid key.                                                                          |
| 400         | VPC.0007   | The project ID is incorrect.                                                   | urlTenantId is not equal token TenantId.                                                | Check the project ID.                                                                       |
| 401         | VPC.0008   | The token in the request is invalid or the request does not contain the token. | Invalid token in the header./ Authorization information is wrong.                       | Check whether the token is valid.                                                           |
| 400         | VPC.1801   | The value length is invalid.                                                   | Tag length is invalid. The key length must be in range [1,36] and value in range [0,43] | Input a valid value.                                                                        |
| 400         | VPC.1801   | The key or value contains invalid characters.                                  | InvalidInput/Tag value xxx is invalid.                                                  | Check the validity of the key or value.                                                     |
| 400         | VPC.1801   | The key or value is left blank.                                                | Tag xxx can not be null.                                                                | Check whether the key or value is left blank.                                               |
| 400         | VPC.1801   | The tag is null.                                                               | Tag can not be null.                                                                    | Check whether the tag is null.                                                              |
| 400         | VPC.1801   | A resource type error occurs.                                                  | Resource xxx is invalid.                                                                | Ensure that the value of <b>resource_type</b> is <b>loadbalancers</b> or <b>listeners</b> . |



| Status Code | Error Code | Description                                                                    | Error Message                                                                        | Measure                                         |
|-------------|------------|--------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|-------------------------------------------------|
| 400         | VPC.1801   | The total number of tags added at a time exceeds 10.                           | number of tags exceeds max unum of 10.                                               | Reduce the number of tags.                      |
| 400         | VPC.1814   | The total number of existing tags and newly added tags exceeds 10.             | Invalid input for operation: resource_id: XXXX, number of tags exceed max num of 10. | Reduce the number of tags.                      |
| 400         | VPC.1814   | The key values of newly added tags are duplicate.                              | Invalid input for operation: tags key is duplicated.                                 | Change the tag values.                          |
| 400         | VPC.1814   | The resource ID does not exist.                                                | Resource XXX XXX could not be found.                                                 | Check whether the resource is available.        |
| 400         | VPC.1814   | The specified key to be deleted does not exist, or the key is an empty string. | The resource could not be found.                                                     | Enter a correct key and send the request again. |
| 400         | VPC.1814   | More than 10 tags are added to a specified resource.                           | Invalid input for operation:resource_id:xxx, number of tags exceeds max num of 10.   | Each resource supports up to 10 tags.           |
| 400         | VPC.1801   | Tags are duplicate.                                                            | Tag key is repeated.                                                                 | Delete duplicate tags and resend the request.   |
| 500         | -          | The request format is incorrect.                                               | Internal Server Error.                                                               | Use the correct request body format.            |

# 8 Examples

## 8.1 Creating a Dedicated Load Balancer and Binding a New EIP to It

### Scenarios

Call APIs to create a dedicated load balancer and bind a new EIP to it.

### Prerequisites

You have created a VPC and a subnet.

### Procedure

1. Query the subnet you have created.
  - a. Send **GET** `https://{vpc_endpoint}/v1/{project_id}/subnets`. *project\_id* indicates the project ID.
  - b. Add **X-Auth-Token** to the request header.
  - c. Check the response.

- The request is successful if the following response is displayed:

```
{
 "subnets": [
 {
 "id": "0535759e-8104-49d9-902c-a05185a94bdf", // Subnet ID
 "name": "subnet-001", // Subnet name
 "description": "",
 "cidr": "172.16.66.0/24", //IPv4 address range
 "dnsList": [
 "100.125.4.6"
],
 "status": "ACTIVE",
 "vpc_id": "44789a9f-3e80-451a-ac03-0818f99b6cdd", // VPC ID
 "ipv6_enable": true,
 "gateway_ip_v6": "2001:db8:a583:37c::1",
 "cidr_v6": "2001:db8:a583:37c::/64",
 "gateway_ip": "172.16.66.1",
 "dhcp_enable": true,
 "primary_dns": "100.125.4.6",
 "availability_zone": "eu-de-01", //AZ of the subnet
 }
]
}
```

```
"neutron_network_id": "0535759e-8104-49d9-902c-a05185a94bdf", // Network ID
"neutron_subnet_id": "1492f0ba-cfce-4e2c-86f7-561d757dfeee", // IPv4 subnet ID
"neutron_subnet_id_v6": "3c052475-b50b-49b9-abb1-558bad45e592",
"extra_dhcp_opts": [
 {
 "opt_value": "8760h",
 "opt_name": "addresstime"
 }
]
}
```

- If the request is abnormal, locate the fault by referring to [Error Codes](#).
2. Create a dedicated load balancer and bind a new EIP to it.
    - a. Send **POST** `https://{elb_endpoint}/v3/{project_id}/elb/loadbalancers`. *project\_id* indicates the project ID.
    - b. Add **X-Auth-Token** to the request header.
    - c. Ensure that the following parameters, including **publicip**, are passed in the request body:

```
{
 "loadbalancer": {
 "vpc_id": "e5a892ff-3c33-44ef-ada5-b713eb1f7a8b",
 "availability_zone_list": [
 "br-iaas-odin1a"
],
 "admin_state_up": true,
 "vip_subnet_cidr_id": "1800b6b8-a69f-4719-813d-24d62aaf32bd",
 "name": "elb-ipv4",
 "publicip": {
 "network_type": "5_bgp",
 "bandwidth": {
 "size": 2,
 "share_type": "PER",
 "charge_mode": "bandwidth",
 "name": "elb_eip_bandwidth"
 }
 }
 }
}
```

- d. Check the response.
  - The request is successful if the following response is displayed:

```
{
 "request_id": "21177eb184c52c5a4540c78dc7fdaee4",
 "loadbalancer": {
 "id": "a2556f92-3310-4173-a6d1-0b2d0bb68478",
 "project_id": "060576782980d5762f9ec014dd2f1148",
 "name": "elb-ipv4",
 "description": "",
 "vip_port_id": "fff961a9-4514-4469-84d4-a2bc4fbdfbeb",
 "vip_address": "192.168.0.162",
 "admin_state_up": true,
 "provisioning_status": "ACTIVE",
 "operating_status": "ONLINE",
 "listeners": [],
 "pools": [],
 "tags": [],
 "provider": "vlb",
 "created_at": "2021-02-23T08:50:19Z",
 "updated_at": "2021-02-23T08:50:19Z",
 "vpc_id": "e5a892ff-3c33-44ef-ada5-b713eb1f7a8b",
 "enterprise_project_id": "0",
 "availability_zone_list": [
```

```
 "br-iaas-odin1a"
],
 "ipv6_vip_address": null,
 "ipv6_vip_virsubnet_id": null,
 "ipv6_vip_port_id": null,
 "ipv6_bandwidth": null,
 "publicips": [
 {
 "publicip_id": "12cba100-764e-476c-bf3f-8aba98782cf5",
 "publicip_address": "10.246.173.188",
 "ip_version": 4
 }
],
 "elb_virsubnet_ids": [
 "4df3e391-5ebf-4300-b614-cf5a4e793666"
],
 "elb_virsubnet_type": "dualstack",
 "ip_target_enable": false,
 "frozen_scene": null,
 "eips": [
 {
 "eip_id": "12cba100-764e-476c-bf3f-8aba98782cf5",
 "eip_address": "10.246.173.188",
 "ip_version": 4
 }
],
 "guaranteed": true,
 "billing_info": null,
 "l4_flavor_id": null,
 "l4_scale_flavor_id": null,
 "l7_flavor_id": null,
 "l7_scale_flavor_id": null,
 "vip_subnet_cidr_id": "1800b6b8-a69f-4719-813d-24d62aaf32bd"
}
```

- If the request is abnormal, locate the fault by referring to [Error Codes](#).

## 8.2 Adding a Listener to a Dedicated Load Balancer

### Scenarios

Call the API to add a listener to a dedicated load balancer.

### Prerequisites

- You have created a dedicated load balancer.
- You have obtained the ID of the dedicated load balancer.

### Procedure

1. Add a listener.
  - a. Send **POST** [https://{elb\\_endpoint}/v3/{project\\_id}/elb/listeners](https://{elb_endpoint}/v3/{project_id}/elb/listeners).  
*project\_id* indicates the project ID.
  - b. Add **X-Auth-Token** to the request header.
  - c. Ensure that the following parameters are passed in the request body:

```
{
 "listener": {
 "protocol_port": 80, // Frontend port. The listener will use this port to receive requests.
```

```
"protocol": "HTTP", // Frontend protocol. The listener will use this protocol to receive requests.
"loadbalancer_id": "f77281cb-9f58-4347-8f82-2180d8bea789", // Load balancer that the listener is added to
 "name": "my_listener" // Listener name
}
}
```

d. Check the response.

- The request is successful if the following response is displayed:

```
{
 "listener": {
 "id": "90ad2705-4ffd-43d3-8f75-af8086bde841",
 "name": "my_listener",
 "protocol_port": 80,
 "protocol": "HTTP",
 "description": "",
 "default_tls_container_ref": null,
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "f77281cb-9f58-4347-8f82-2180d8bea789"
 }
],
 "client_ca_tls_container_ref": null,
 "project_id": "057ef081eb00d2732fd1c01a9be75e6f",
 "sni_container_refs": [],
 "connection_limit": -1,
 "default_pool_id": null,
 "tls_ciphers_policy": null,
 "tags": [],
 "created_at": "2020-11-21T03:09:13Z",
 "updated_at": "2020-11-21T03:09:13Z",
 "http2_enable": false,
 "insert_headers": {
 "X-Forwarded-ELB-IP": false,
 "X-Forwarded-Host": true,
 "X-Forwarded-For-Port": false,
 "X-Forwarded-Port": false
 },
 "member_timeout": 60,
 "client_timeout": 60,
 "keepalive_timeout": 60,
 "ipgroup": null,
 "enable_member_retry": true,
 "transparent_client_ip_enable": true
 },
 "request_id": "fcd61ee6a6a6c673c65fa0df0577fed9"
}
```

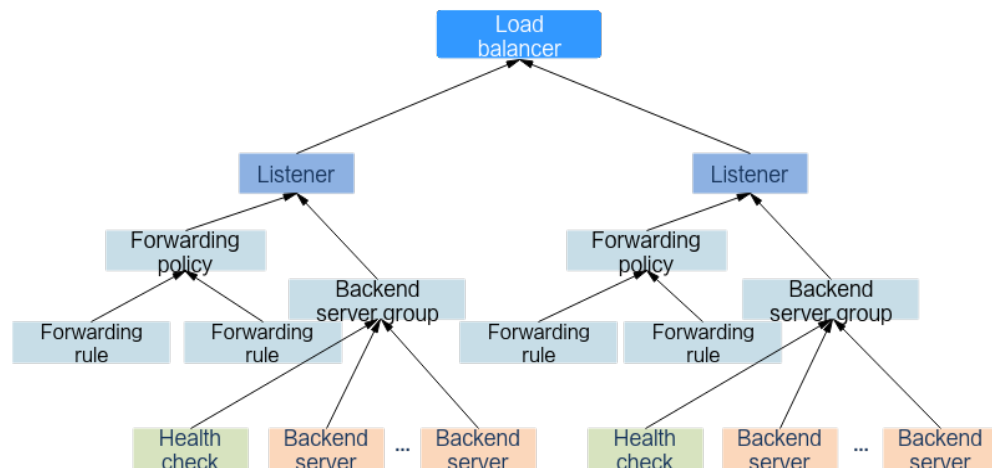
- If the request is abnormal, locate the fault by referring to [Error Codes](#).

## 8.3 Deleting a Dedicated Load Balancer

### Scenarios

Call APIs to delete a dedicated load balancer.

Before you delete a dedicated load balancer, delete all resources associated with it. [Figure 8-1](#) shows the associated resources.

**Figure 8-1** Resources associated with a dedicated load balancer

## Procedure

Perform the following steps to delete the associated resources and the load balancer. Skip the corresponding step if the associated resources do not exist. For example, you can skip **1** if no health check is configured.

1. Delete the health check configured for each associated backend server group.
  - a. Send **DELETE** `https://{elb_endpoint}/v3/{project_id}/elb/healthmonitors/{healthmonitor_id}`. *project\_id* indicates the project ID, and *healthmonitor\_id* indicates the health check ID.
  - b. Add **X-Auth-Token** to the request header.
  - c. Check the response.
    - If the request is successful, 204 is returned, and the response body is empty.
    - If the request is abnormal, locate the fault by referring to [Error Codes](#).
2. Remove backend servers from each associated backend server group.
  - a. Send **DELETE** `https://{elb_endpoint}/v3/{project_id}/elb/pools/{pool_id}/members/{member_id}`. *project\_id* indicates the project ID, *pool\_id* indicates the backend server group ID, and *member\_id* indicates the backend server ID.
  - b. Add **X-Auth-Token** to the request header.
  - c. Check the response.
    - If the request is successful, 204 is returned, and the response body is empty.
    - If the request is abnormal, locate the fault by referring to [Error Codes](#).
3. Delete each associated backend server group.
  - a. Send **DELETE** `https://{elb_endpoint}/v3/{project_id}/elb/pools/{pool_id}`. *project\_id* indicates the project ID, and *pool\_id* indicates the backend server group ID.

- b. Add **X-Auth-Token** to the request header.
    - c. Check the response.
      - If the request is successful, 204 is returned, and the response body is empty.
      - If the request is abnormal, locate the fault by referring to [Error Codes](#).
  4. Delete the forwarding rules added to each listener.
    - a. Send **DELETE** `https://{elb_endpoint}/v3/{project_id}/elb/l7policies/{policy_id}/rules/{rule_id}`. *project\_id* indicates the project ID, *policy\_id* indicates the forwarding policy ID, and *rule\_id* indicates the forwarding rule ID.
    - b. Add **X-Auth-Token** to the request header.
    - c. Check the response.
      - If the request is successful, 204 is returned, and the response body is empty.
      - If the request is abnormal, locate the fault by referring to [Error Codes](#).
  5. Delete the forwarding policies added to each listener.
    - a. Send **DELETE** `https://{elb_endpoint}/v3/{project_id}/elb/l7policies/{policy_id}`. *project\_id* indicates the project ID, and *policy\_id* indicates the forwarding policy ID.
    - b. Add **X-Auth-Token** to the request header.
    - c. Check the response.
      - If the request is successful, 204 is returned, and the response body is empty.
      - If the request is abnormal, locate the fault by referring to [Error Codes](#).
  6. Delete each listener added to the load balancer.
    - a. Send **DELETE** `https://{elb_endpoint}/v3/{project_id}/elb/listeners/{listener_id}`. *project\_id* indicates the project ID, and *listener\_id* indicates the listener ID.
    - b. Add **X-Auth-Token** to the request header.
    - c. Check the response.
      - If the request is successful, 204 is returned, and the response body is empty.
      - If the request is abnormal, locate the fault by referring to [Error Codes](#).
  7. Delete the load balancer.
    - a. Send **DELETE** `https://{elb_endpoint}/v3/{project_id}/elbloadbalancers/{loadbalancer_id}`. *project\_id* indicates the project ID, and *loadbalancer\_id* indicates the load balancer ID.

- b. Add **X-Auth-Token** to the request header.
- c. Check the response.
  - If the request is successful, 204 is returned, and the response body is empty.
  - If the request is abnormal, locate the fault by referring to [Error Codes](#).

## 8.4 Creating a Public Network (Shared) Load Balancer

### Scenarios

Call APIs to create a load balancer and bind a new EIP to it.

### Prerequisites

You have created a VPC and a subnet.

### Procedure

Bind an EIP to the port that has been bound to the private IP address of the load balancer based on [Example request 1: Creating a private network load balancer](#). For details about the parameters, see [Table 8-1](#).

**Table 8-1** Request parameters

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| publicip              | Yes       | Object | Specifies the EIP. For details, see <a href="#">Table 8-2</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| bandwidth             | Yes       | Object | Specifies the bandwidth. For details, see <a href="#">Table 8-3</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| enterprise_project_id | No        | String | <ul style="list-style-type: none"><li>• Specifies the enterprise project ID. The value is <b>0</b> or a UUID that can contain a maximum of 36 characters, including hyphens (-).</li><li>• When assigning an EIP, you need to bind an enterprise project ID to the EIP.</li><li>• If this parameter is not specified, the default value is <b>0</b>.</li></ul> <b>NOTE</b><br>For more information about enterprise projects and how to obtain enterprise project IDs, see <a href="#">Enterprise Management User Guide</a> . |



**Table 8-2** publicip parameter description

| Parameter  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type       | Yes       | String  | <ul style="list-style-type: none"><li>Specifies the EIP type.</li><li>The value can be <b>5_telcom</b>, <b>5_union</b>, <b>5_bgp</b>, or <b>5_sbgp</b>.<ul style="list-style-type: none"><li>CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li><li>CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li><li>CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li><li>CN-Hong Kong: <b>5_bgp</b></li><li>CN Southwest-Guiyang1: <b>5_bgp</b> and <b>5_sbgp</b></li><li>CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li></ul></li><li>Note:<ul style="list-style-type: none"><li>The configured value must be supported by the system.</li><li><b>publicip_id</b> is an IPv4 port. If <b>publicip_type</b> is not specified, the default value is <b>5_bgp</b>.</li></ul></li></ul> |
| ip_version | No        | Integer | <ul style="list-style-type: none"><li>Specifies the EIP version.</li><li>The value can be <b>4</b> and <b>6</b>. <b>4</b> indicates an IPv4 address, and <b>6</b> indicates an IPv6 address.</li><li>Note:<ul style="list-style-type: none"><li>The configured value must be supported by the system.</li><li>If this parameter is left blank or is an empty string, an IPv4 address is assigned by default.</li></ul></li></ul>                                                                                                                                                                                                                                                                                                                                                               |

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                                           |
|------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| ip_address | No        | String | <ul style="list-style-type: none"><li>Specifies the EIP to be assigned. The system automatically assigns an EIP if you do not specify it.</li><li>The value must be a valid IPv4 address in the available IP address range.</li></ul> |

**Table 8-3 bandwidth** parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name      | No        | String | <ul style="list-style-type: none"><li>Specifies the bandwidth name.</li><li>The value can contain 1 to 64 characters that can contain letters, digits, underscores (_), hyphens (-), and periods (.).</li><li>This parameter is mandatory when <b>share_type</b> is set to <b>PER</b>. This parameter will be ignored when <b>share_type</b> is set to <b>WHOLE</b> with an ID specified.</li></ul> |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-----------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| size      | No        | Integer | <ul style="list-style-type: none"><li>• Specifies the bandwidth (Mbit/s).</li><li>• The value ranges from <b>1</b> to <b>300</b> by default (The specific range may vary depending on the configuration in each region. You can see the bandwidth range of each region on the management console.)</li><li>• This parameter is mandatory when <b>share_type</b> is set to <b>PER</b>. This parameter will be ignored when <b>share_type</b> is set to <b>WHOLE</b> with an ID specified.</li><li>• The minimum unit for bandwidth adjustment varies depending on the bandwidth range. The details are as follows:<ul style="list-style-type: none"><li>– The minimum increment is 1 Mbit/s if the allowed bandwidth ranges from 0 to 300 Mbit/s.</li><li>– The minimum increment is 50 Mbit/s if the allowed bandwidth ranges from 301 Mbit/s to 1000 Mbit/s.</li><li>– The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1,000 Mbit/s.</li></ul></li></ul> |
| id        | No        | String  | <ul style="list-style-type: none"><li>• Specifies the bandwidth ID. You can specify an existing shared bandwidth when assigning an EIP.</li><li>• The value can be the ID of the shared bandwidth whose type is set to <b>WHOLE</b>.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                              |
|-------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| share_type  | Yes       | String | <ul style="list-style-type: none"><li>Specifies the bandwidth type.</li><li>The value can be one of the following:<ul style="list-style-type: none"><li><b>PER</b>: indicates dedicated bandwidth.</li><li><b>WHOLE</b>: indicated shared bandwidth.</li></ul></li></ul> |
| charge_mode | No        | String | <ul style="list-style-type: none"><li>The default value is <b>traffic</b>. Currently, only billing by traffic is supported.</li></ul>                                                                                                                                    |

- Step 1: Apply for an EIP.

POST https://{VPCEndpoint}/v1/8b7e35ad379141fc9df3e178bd64f55c/publicips

```
{
 "publicip": {
 "type": "5_bgp",
 "ip_version": 4
 },
 "bandwidth": {
 "name": "bandwidth123",
 "size": 10,
 "share_type": "PER"
 }
}
```

- Example response

```
{
 "publicip": {
 "id": "f588ccfa-8750-4d7c-bf5d-2ede24414706",
 "status": "PENDING_CREATE",
 "type": "5_bgp",
 "public_ip_address": "139.9.204.183",
 "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
 "ip_version": 4,
 "create_time": "2019-06-29 06:45:32",
 "bandwidth_size": 1
 }
}
```

- Step 2: Bind the EIP. (The value of **public\_id** is the same as that in the [Example response](#), and the value of **port\_id** is the same as that of **vip\_port\_id** in [Example response 1](#).)

PUT /v1/8b7e35ad379141fc9df3e178bd64f55c/publicips/f588ccfa-8750-4d7c-bf5d-2ede24414706

```
{
 "publicip": {
 "port_id": "a7ecbdb5-5a63-41dd-a830-e16c0a7e04a7"
 }
}
```

- Example response

```
{
 "publicip": {
 "id": "f588ccfa-8750-4d7c-bf5d-2ede24414706",
 "status": "ACTIVE",
 "type": "5_bgp",
 "port_id": "a7ecbdb5-5a63-41dd-a830-e16c0a7e04a7",
 }
}
```

```
"public_ip_address": "139.9.204.183",
"private_ip_address": "192.168.1.131",
"tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
"create_time": "2019-06-29 07:33:18",
"bandwidth_size": 1,
"ip_version": 4
}
```

- After the preceding steps are complete, the load balancer has the capability of accessing the public network. You can access the load balancer using 139.9.204.183, the value of parameter **public\_ip\_address**.

## 8.5 Querying the ID of an ECS Used as a Backend Server

### Scenarios

Call APIs to obtain the ID of an ECS used as a backend server of a load balancer.

### Prerequisites

You have created a load balancer, a backend server group, and a backend server.

### Procedure

Send **GET /v3/{project\_id}/elb/members**. *project\_id* indicates the project ID. You can add other criteria as you needed. For details, see the API document. Add **X-Auth-Token** to the request header.

View the response result and obtain the ECS ID from **instance\_id**.

- The request is successful if the following response is displayed:

```
{
 "request_id": "0df89f0ad2ecf0e0a5688978d28e9a6d",
 "members": [
 {
 "weight": 1,
 "admin_state_up": true,
 "project_id": "04dd36f9c0000fe22f9fc00b409f1sq1",
 "address": "192.168.2.96",
 "protocol_port": 80,
 "id": "0b7c1e58-5940-41c1-a7c5-dbe4b3f23e4w",
 "operating_status": ONLINE,
 "status": [
 {
 "listener_id": "73bea9d6-fb7f-47cc-b949-c3382abb1f46",
 "operating_status": "ONLINE"
 }
],
 "instance_id": "6985a0dc-5884-40f2-9426-15fb4bab8f1d", // ECS ID
 "device_id": "6985a0dc-5884-40f2-9426-15fb4bab8f1d",
 "device_owner": "compute:az1",
 "member_type": "instance",
 "created_at": "2023-05-15T07:15:43Z",
 "updated_at": "2023-05-15T07:15:53Z",
 "loadbalancer_id": "955af176-4275-49ac-b47e-05912x9dj33c",
 "loadbalancers": [
 {
 "id": "955af176-4275-49ac-b47e-05912x9dj33c"
 }
]
 }
],
}
```

```
 "pool_id": "b6e6fdcf-4f4d-4d21-95ca-925143af6de8",
 "ip_version": "v4",
 "subnet_cidr_id": "b765590e-905e-4e13-9d34-0e0ea9de2k9d"
 },
],
 "page_info": {
 "previous_marker": "0b7c1e58-5940-41c1-a7c5-dbe4b3f83506",
 "current_count": 1
 }
}
```

- If the request is abnormal, locate the fault by referring to [Error Codes](#).

# 9 Permissions and Supported Actions

---

## 9.1 Introduction

This section describes fine-grained permissions management for ELB. If your Huawei Cloud account does not need individual IAM users, then you may skip this chapter.

By default, new IAM users do not have permissions assigned. You need to add a user to one or more groups, and attach permissions policies or roles to these groups. Users inherit permissions from the groups to which they are added and can perform specified operations on cloud services based on the permissions.

An account has all of the permissions required to call all APIs, but IAM users must have the required permissions specifically assigned. The permissions required for calling an API are determined by the actions supported by the API. Only users who have been granted permissions allowing the actions can call the API successfully. For example, if an IAM user queries backend servers using an API, the user must have been granted permissions that allow the `elb:servers:list` action.

## Supported Actions

ELB provides system-defined policies that can be directly used in IAM. You can also create custom policies and use them to supplement system-defined policies, implementing more refined access control. Operations supported by policies are specific to APIs. The following are common concepts related to policies:

- **Permissions:** Defined by actions in a custom policy.
- **APIs:** REST APIs that can be called in a custom policy.
- **Actions:** Added to a custom policy to control permissions for specific operations.
- **Dependencies:** actions which a specific action depends on. When allowing an action for a user, you also need to allow any existing action dependencies for that user.
- **IAM projects or enterprise projects:** Type of projects in which policies can be used to grant permissions. A policy can be applied to IAM projects, enterprise projects, or both. Policies that contain actions supporting both IAM and

enterprise projects can be assigned to user groups and take effect in both IAM and Enterprise Management. Policies that only contain actions supporting IAM projects can be assigned to user groups and only take effect for IAM. Such policies will not take effect if they are assigned to user groups in Enterprise Project. For details about the differences between IAM and enterprise projects, see [Differences Between IAM Projects and Enterprise Projects](#)

**Supported Actions (V3)** describes the custom policy authorization items supported by ELB.

- **Load balancer actions**, including actions supported by all load balancer APIs, such as the APIs for creating a load balancer, querying a load balancer, querying the load balancer status tree, querying the load balancer list, updating a load balancer, and deleting a load balancer.

 **NOTE**

The check mark (√) indicates that an action takes effect. The cross mark (x) indicates that an action does not take effect.

## 9.2 Supported Actions (V2)

### 9.2.1 Load Balancer

| Permi<br>ssion                                                    | API                                                                               | Action                       | IAM<br>Project | Enterprise<br>Project |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------|----------------|-----------------------|
| Creat<br>es a<br>load<br>balan<br>cer                             | POST /v2/<br>{project_id}/elb/<br>loadbalancers                                   | elb:loadbalanc<br>ers:create | √              | √                     |
| Queri<br>es a<br>load<br>balan<br>cer                             | GET /v2/<br>{project_id}/elb/<br>loadbalancers/<br>{loadbalancer_id}              | elb:loadbalanc<br>ers:get    | √              | √                     |
| Queri<br>es the<br>status<br>tree<br>of a<br>load<br>balan<br>cer | GET /v2/<br>{project_id}/elb/<br>loadbalancers/<br>{loadbalancer_id}/<br>statuses | elb:loadbalanc<br>ers:get    | √              | √                     |



| Permission              | API                                                         | Action                   | IAM Project | Enterprise Project |
|-------------------------|-------------------------------------------------------------|--------------------------|-------------|--------------------|
| Queries load balancers  | GET /v2/{project_id}/elb/loadbalancers                      | elb:loadbalancers:list   | √           | √                  |
| Updates a load balancer | PUT /v2/{project_id}/elb/loadbalancers/{loadbalancer_id}    | elb:loadbalancers:put    | √           | √                  |
| Deletes a load balancer | DELETE /v2/{project_id}/elb/loadbalancers/{loadbalancer_id} | elb:loadbalancers:delete | √           | √                  |

## 9.2.2 Listener

| Permission          | API                                                 | Action               | IAM Project | Enterprise Project |
|---------------------|-----------------------------------------------------|----------------------|-------------|--------------------|
| Adds a listener     | POST /v2/{project_id}/elb/listeners                 | elb:listeners:create | √           | √                  |
| Queries a listener  | GET /v2/{project_id}/elb/listeners/{listener_id}    | elb:listeners:get    | √           | √                  |
| Queries listeners   | GET /v2/{project_id}/elb/listeners                  | elb:listeners:list   | √           | √                  |
| Modifies a listener | PUT /v2/{project_id}/elb/listeners/{listener_id}    | elb:listeners:put    | √           | √                  |
| Deletes a listener  | DELETE /v2/{project_id}/elb/listeners/{listener_id} | elb:listeners:delete | √           | √                  |

### 9.2.3 Backend Server Group

| Permission                      | API                                         | Action           | IAM Project | Enterprise Project |
|---------------------------------|---------------------------------------------|------------------|-------------|--------------------|
| Adds a backend server group     | POST /v2/{project_id}/elb/pools             | elb:pools:create | √           | √                  |
| Queries a backend server group  | GET /v2/{project_id}/elb/pools/{pool_id}    | elb:pools:get    | √           | √                  |
| Queries backend server groups   | GET /v2/{project_id}/elb/pools              | elb:pools:list   | √           | √                  |
| Modifies a backend server group | PUT /v2/{project_id}/elb/pools/{pool_id}    | elb:pools:put    | √           | √                  |
| Deletes a backend server group  | DELETE /v2/{project_id}/elb/pools/{pool_id} | elb:pools:delete | √           | √                  |

### 9.2.4 Backend Server

| Permission            | API                                               | Action             | IAM Project | Enterprise Project |
|-----------------------|---------------------------------------------------|--------------------|-------------|--------------------|
| Adds a backend server | POST /v2/{project_id}/elb/pools/{pool_id}/members | elb:members:create | √           | √                  |

| Permission                | API                                                             | Action             | IAM Project | Enterprise Project |
|---------------------------|-----------------------------------------------------------------|--------------------|-------------|--------------------|
| Queries a backend server  | GET /v2/{project_id}/elb/pools/{pool_id}/members/{member_id}    | elb:members:get    | √           | √                  |
| Queries backend servers   | GET /v2/{project_id}/elb/pools/{pool_id}/members                | elb:members:list   | √           | √                  |
| Modifies a backend server | PUT /v2/{project_id}/elb/pools/{pool_id}/members/{member_id}    | elb:members:put    | √           | √                  |
| Removes a backend server  | DELETE /v2/{project_id}/elb/pools/{pool_id}/members/{member_id} | elb:members:delete | √           | √                  |

## 9.2.5 Health Check

| Permission                | API                                                        | Action                    | IAM Project | Enterprise Project |
|---------------------------|------------------------------------------------------------|---------------------------|-------------|--------------------|
| Configures a health check | POST /v2/{project_id}/elb/healthmonitors                   | elb:healthmonitors:create | √           | √                  |
| Queries a health check    | GET /v2/{project_id}/elb/healthmonitors/{healthmonitor_id} | elb:healthmonitors:get    | √           | √                  |
| Queries health checks     | GET /v2/{project_id}/elb/healthmonitors                    | elb:healthmonitors:list   | √           | √                  |
| Modifies a health check   | PUT /v2/{project_id}/elb/healthmonitors/{healthmonitor_id} | elb:healthmonitors:put    | √           | √                  |

| Permissi<br>on         | API                                                           | Action                    | IAM<br>Project | Enterprise<br>Project |
|------------------------|---------------------------------------------------------------|---------------------------|----------------|-----------------------|
| Deletes a health check | DELETE /v2/{project_id}/elb/healthmonitors/{healthmonitor_id} | elb:healthmonitors:delete | √              | √                     |

## 9.2.6 Forwarding Policy

| Permis<br>sion              | API                                                  | Action                | IAM<br>Project | Enterprise<br>Project |
|-----------------------------|------------------------------------------------------|-----------------------|----------------|-----------------------|
| Adds a forwarding policy    | POST /v2/{project_id}/elb/l7policies                 | elb:l7policies:create | √              | √                     |
| Queries a forwarding policy | GET /v2/{project_id}/elb/l7policies/{l7policy_id}    | elb:l7policies:get    | √              | √                     |
| Queries forwarding policies | GET /v2/{project_id}/elb/l7policies                  | elb:l7policies:list   | √              | √                     |
| Updates a forwarding policy | PUT /v2/{project_id}/elb/l7policies/{l7policy_id}    | elb:l7policies:put    | √              | √                     |
| Deletes a forwarding policy | DELETE /v2/{project_id}/elb/l7policies/{l7policy_id} | elb:l7policies:delete | √              | √                     |

## 9.2.7 Forwarding Rule

| Permission               | API                                                                    | Action             | IAM Project | Enterprise Project |
|--------------------------|------------------------------------------------------------------------|--------------------|-------------|--------------------|
| Create a forwarding rule | POST /v2/{project_id}/elb/l7policies/{l7policy_id}/rules               | elb:l7rules:create | √           | √                  |
| Query a forwarding rule  | GET /v2/{project_id}/elb/l7policies/{l7policy_id}/rules/{l7rule_id}    | elb:l7rules:get    | √           | √                  |
| Query forwarding rules   | GET /v2/{project_id}/elb/l7policies/{l7policy_id}/rules                | elb:l7rules:list   | √           | √                  |
| Update a forwarding rule | PUT /v2/{project_id}/elb/l7policies/{l7policy_id}/rules/{l7rule_id}    | elb:l7rules:put    | √           | √                  |
| Delete a forwarding rule | DELETE /v2/{project_id}/elb/l7policies/{l7policy_id}/rules/{l7rule_id} | elb:l7rules:delete | √           | √                  |

## 9.2.8 Whitelist

| Permission        | API                                                | Action                | IAM Project | Enterprise Project |
|-------------------|----------------------------------------------------|-----------------------|-------------|--------------------|
| Adds a whitelist  | POST /v2/{project_id}/elb/whitelists               | elb:whitelists:create | √           | √                  |
| Query a whitelist | GET /v2/{project_id}/elb/whitelists/{whitelist_id} | elb:whitelists:get    | √           | √                  |

| Permi<br>ssion                  | API                                                           | Action                    | IAM<br>Project | Enterprise<br>Project |
|---------------------------------|---------------------------------------------------------------|---------------------------|----------------|-----------------------|
| Quer<br>ies<br>whitel<br>ists   | GET /v2/{project_id}/elb/<br>whitelists                       | elb:whitelists:<br>list   | √              | √                     |
| Modifi<br>es a<br>whitel<br>ist | PUT /v2/{project_id}/elb/<br>whitelists/{whitelist_id}        | elb:whitelists:<br>put    | √              | √                     |
| Delete<br>s a<br>whitel<br>ist  | DELETE /v2/<br>{project_id}/elb/whitelists/<br>{whitelist_id} | elb:whitelists:<br>delete | √              | √                     |

## 9.2.9 SSL Certificate

| Perm<br>issio<br>n                | API                                                           | Action                      | IAM<br>Project | Enterprise<br>Project |
|-----------------------------------|---------------------------------------------------------------|-----------------------------|----------------|-----------------------|
| Creat<br>es a<br>certifi<br>cate  | POST /v2/{project_id}/elb/<br>certificates                    | elb:certifica<br>tes:create | √              | √                     |
| Quer<br>ies a<br>certifi<br>cate  | GET /v2/{project_id}/elb/<br>certificates/{certificate_id}    | elb:certifica<br>tes:get    | √              | √                     |
| Quer<br>ies<br>certifi<br>cates   | GET /v2/{project_id}/elb/<br>certificates                     | elb:certifica<br>tes:list   | √              | √                     |
| Modif<br>ies a<br>certifi<br>cate | PUT /v2/{project_id}/elb/<br>certificates/{certificate_id}    | elb:certifica<br>tes:put    | √              | √                     |
| Delet<br>es a<br>certifi<br>cate  | DELETE /v2/{project_id}/elb/<br>certificates/{certificate_id} | elb:certifica<br>tes:delete | √              | √                     |

## 9.2.10 Quota

| Permi<br>ssion                                           | API                                          | Action              | IAM<br>Project | Enterprise<br>Project |
|----------------------------------------------------------|----------------------------------------------|---------------------|----------------|-----------------------|
| Queri<br>es<br>defaul<br>t<br>resour<br>ce<br>quota<br>s | GET /v2/{project_id}/elb/<br>quotas/defaults | elb:quotas<br>:list | √              | x                     |
| Queri<br>es<br>curren<br>t<br>resour<br>ce<br>quota<br>s | GET /v2/{project_id}/elb/<br>quotas          | elb:quotas<br>:list | √              | x                     |

## 9.2.11 Tag

| Permissio<br>n                                                              | API                                                                             | Action                              | IAM<br>Project | Enterprise<br>Project |
|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------|-------------------------------------|----------------|-----------------------|
| Queries all<br>tags of a<br>load<br>balancer.                               | GET /v2.0/{project_id}/<br>loadbalancers/<br>{loadbalancer_id}/tags             | elb:loadbal<br>ancerTags:g<br>et    | √              | x                     |
| Adds or<br>deletes<br>load<br>balancer<br>tags in<br>batches.               | POST /v2.0/{project_id}/<br>loadbalancers/<br>{loadbalancer_id}/tags/<br>action | elb:loadbal<br>ancerTags:c<br>reate | √              | x                     |
| Queries<br>tags of all<br>load<br>balancers<br>in a<br>specific<br>project. | GET /v2.0/{project_id}/<br>loadbalancers/tags                                   | elb:loadbal<br>ancerTags:g<br>et    | √              | x                     |

| Permission                                              | API                                                                  | Action                      | IAM Project | Enterprise Project |
|---------------------------------------------------------|----------------------------------------------------------------------|-----------------------------|-------------|--------------------|
| Queries load balancers by tag.                          | POST /v2.0/{project_id}/loadbalancers/resource_instances/action      | elb:loadbalancerTags:get    | √           | x                  |
| Adds a tag to a specific load balancer.                 | POST /v2.0/{project_id}/loadbalancers/{loadbalancer_id}/tags         | elb:loadbalancerTags:create | √           | x                  |
| Deletes a tag with a specific key from a load balancer. | DELETE /v2.0/{project_id}/loadbalancers/{loadbalancer_id}/tags/{key} | elb:loadbalancerTags:delete | √           | x                  |
| Queries all tags of a listener.                         | GET /v2.0/{project_id}/listeners/{listener_id}/tags                  | elb:listenerTags:get        | √           | x                  |
| Adds or deletes listener tags in batches.               | POST /v2.0/{project_id}/listeners/{listener_id}/tags/action          | elb:listenerTags:create     | √           | x                  |
| Queries the tags of all listeners.                      | GET /v2.0/{project_id}/listeners/tags                                | elb:listenerTags:get        | √           | x                  |
| Queries listeners by tag.                               | POST /v2.0/{project_id}/listeners/resource_instances/action          | elb:listenerTags:get        | √           | x                  |
| Adds a tag to a specific listener.                      | POST /v2.0/{project_id}/listeners/{listener_id}/tags                 | elb:listenerTags:create     | √           | x                  |
| Deletes a tag with a specific key from a listener.      | DELETE /v2.0/{project_id}/listeners/{listener_id}/tags/{key}         | elb:listenerTags:delete     | √           | x                  |

## 9.2.12 Precautions for API Permissions

**elb:quotas:list** controls the fine-grained permission for quota display.



**elb:logtanks:create**, **elb:logtanks:list**, **elb:logtanks:get**, **elb:logtanks:put**, and **elb:logtanks:delete** control the fine-grained permission for log creation, log list query, log details query, log update, and log deletion.

The logging function relies on LTS, and the **lts:\*:get\*** and **lts:\*:list\*** permissions at the project level are required.

The monitoring function relies on Cloud Eye.

## 9.3 Supported Actions (V3)

### 9.3.1 Load Balancer

| Permi<br>ssion                                                    | API                                                                               | Action                       | IAM<br>Project | Enterprise<br>Project |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------|----------------|-----------------------|
| Creat<br>es a<br>load<br>balan<br>cer                             | POST /v3/<br>{project_id}/elb/<br>loadbalancers                                   | elb:loadbalanc<br>ers:create | √              | √                     |
| Queri<br>es a<br>load<br>balan<br>cer                             | GET /v3/<br>{project_id}/elb/<br>loadbalancers/<br>{loadbalancer_id}              | elb:loadbalanc<br>ers:get    | √              | √                     |
| Queri<br>es the<br>status<br>tree<br>of a<br>load<br>balan<br>cer | GET /v3/<br>{project_id}/elb/<br>loadbalancers/<br>{loadbalancer_id}/<br>statuses | elb:loadbalanc<br>ers:get    | √              | √                     |
| Queri<br>es<br>load<br>balan<br>cers                              | GET /v3/<br>{project_id}/elb/<br>loadbalancers                                    | elb:loadbalanc<br>ers:list   | √              | √                     |
| Updat<br>es a<br>load<br>balan<br>cer                             | PUT /v3/<br>{project_id}/elb/<br>loadbalancers/<br>{loadbalancer_id}              | elb:loadbalanc<br>ers:put    | √              | √                     |

| Permission              | API                                                         | Action                   | IAM Project | Enterprise Project |
|-------------------------|-------------------------------------------------------------|--------------------------|-------------|--------------------|
| Deletes a load balancer | DELETE /v3/{project_id}/elb/loadbalancers/{loadbalancer_id} | elb:loadbalancers:delete | √           | √                  |

### 9.3.2 Listener

| Permission          | API                                                 | Action               | IAM Project | Enterprise Project |
|---------------------|-----------------------------------------------------|----------------------|-------------|--------------------|
| Adds a listener     | POST /v3/{project_id}/elb/listeners                 | elb:listeners:create | √           | √                  |
| Queries a listener  | GET /v3/{project_id}/elb/listeners/{listener_id}    | elb:listeners:get    | √           | √                  |
| Queries listeners   | GET /v3/{project_id}/elb/listeners                  | elb:listeners:list   | √           | √                  |
| Modifies a listener | PUT /v3/{project_id}/elb/listeners/{listener_id}    | elb:listeners:put    | √           | √                  |
| Deletes a listener  | DELETE /v3/{project_id}/elb/listeners/{listener_id} | elb:listeners:delete | √           | √                  |

### 9.3.3 Backend Server Group

| Permission                     | API                             | Action           | IAM Project | Enterprise Project |
|--------------------------------|---------------------------------|------------------|-------------|--------------------|
| Creates a backend server group | POST /v3/{project_id}/elb/pools | elb:pools:create | √           | √                  |

| Permission                      | API                                         | Action           | IAM Project | Enterprise Project |
|---------------------------------|---------------------------------------------|------------------|-------------|--------------------|
| Queries a backend server group  | GET /v3/{project_id}/elb/pools/{pool_id}    | elb:pools:get    | √           | √                  |
| Queries backend server groups   | GET /v3/{project_id}/elb/pools              | elb:pools:list   | √           | √                  |
| Modifies a backend server group | PUT /v3/{project_id}/elb/pools/{pool_id}    | elb:pools:put    | √           | √                  |
| Deletes a backend server group  | DELETE /v3/{project_id}/elb/pools/{pool_id} | elb:pools:delete | √           | √                  |

### 9.3.4 Backend Server

| Permission               | API                                                          | Action             | IAM Project | Enterprise Project |
|--------------------------|--------------------------------------------------------------|--------------------|-------------|--------------------|
| Adds a backend server    | POST /v3/{project_id}/elb/pools/{pool_id}/members            | elb:members:create | √           | √                  |
| Queries a backend server | GET /v3/{project_id}/elb/pools/{pool_id}/members/{member_id} | elb:members:get    | √           | √                  |

| Permission                | API                                                             | Action             | IAM Project | Enterprise Project |
|---------------------------|-----------------------------------------------------------------|--------------------|-------------|--------------------|
| Queries backend servers   | GET /v3/{project_id}/elb/pools/{pool_id}/members                | elb:members:list   | √           | √                  |
| Modifies a backend server | PUT /v3/{project_id}/elb/pools/{pool_id}/members/{member_id}    | elb:members:put    | √           | √                  |
| Removes a backend server  | DELETE /v3/{project_id}/elb/pools/{pool_id}/members/{member_id} | elb:members:delete | √           | √                  |

### 9.3.5 Health Check

| Permission                | API                                                           | Action                    | IAM Project | Enterprise Project |
|---------------------------|---------------------------------------------------------------|---------------------------|-------------|--------------------|
| Configures a health check | POST /v3/{project_id}/elb/healthmonitors                      | elb:healthmonitors:create | √           | √                  |
| Queries a health check    | GET /v3/{project_id}/elb/healthmonitors/{healthmonitor_id}    | elb:healthmonitors:get    | √           | √                  |
| Queries health checks     | GET /v3/{project_id}/elb/healthmonitors                       | elb:healthmonitors:list   | √           | √                  |
| Modifies a health check   | PUT /v3/{project_id}/elb/healthmonitors/{healthmonitor_id}    | elb:healthmonitors:put    | √           | √                  |
| Deletes a health check    | DELETE /v3/{project_id}/elb/healthmonitors/{healthmonitor_id} | elb:healthmonitors:delete | √           | √                  |

### 9.3.6 Forwarding Policy

| Permission                  | API                                                  | Action                | IAM Project | Enterprise Project |
|-----------------------------|------------------------------------------------------|-----------------------|-------------|--------------------|
| Adds a forwarding policy    | POST /v3/{project_id}/elb/l7policies                 | elb:l7policies:create | √           | √                  |
| Queries a forwarding policy | GET /v3/{project_id}/elb/l7policies/{l7policy_id}    | elb:l7policies:get    | √           | √                  |
| Queries forwarding policies | GET /v3/{project_id}/elb/l7policies                  | elb:l7policies:list   | √           | √                  |
| Updates a forwarding policy | PUT /v3/{project_id}/elb/l7policies/{l7policy_id}    | elb:l7policies:put    | √           | √                  |
| Deletes a forwarding policy | DELETE /v3/{project_id}/elb/l7policies/{l7policy_id} | elb:l7policies:delete | √           | √                  |

### 9.3.7 Forwarding Rule

| Permission                | API                                                                 | Action             | IAM Project | Enterprise Project |
|---------------------------|---------------------------------------------------------------------|--------------------|-------------|--------------------|
| Creates a forwarding rule | POST /v3/{project_id}/elb/l7policies/{l7policy_id}/rules            | elb:l7rules:create | √           | √                  |
| Queries a forwarding rule | GET /v3/{project_id}/elb/l7policies/{l7policy_id}/rules/{l7rule_id} | elb:l7rules:get    | √           | √                  |

| Permission                | API                                                                    | Action             | IAM Project | Enterprise Project |
|---------------------------|------------------------------------------------------------------------|--------------------|-------------|--------------------|
| Queries forwarding rules  | GET /v3/{project_id}/elb/l7policies/{l7policy_id}/rules                | elb:l7rules:list   | √           | √                  |
| Updates a forwarding rule | PUT /v3/{project_id}/elb/l7policies/{l7policy_id}/rules/{l7rule_id}    | elb:l7rules:put    | √           | √                  |
| Deletes a forwarding rule | DELETE /v3/{project_id}/elb/l7policies/{l7policy_id}/rules/{l7rule_id} | elb:l7rules:delete | √           | √                  |

### 9.3.8 IP Address Group

| Permission                  | API                                            | Action              | IAM Project | Enterprise Project |
|-----------------------------|------------------------------------------------|---------------------|-------------|--------------------|
| Creates an IP address group | POST /v3/{project_id}/elb/ipgroups             | elb:ipgroups:create | √           | √                  |
| Queries an IP address group | GET /v3/{project_id}/elb/ipgroups/{ipgroup_id} | elb:ipgroups:get    | √           | √                  |
| Queries IP address groups   | GET /v3/{project_id}/elb/ipgroups              | elb:ipgroups:list   | √           | √                  |
| Updates an IP address group | PUT /v3/{project_id}/elb/ipgroups/{ipgroup_id} | elb:ipgroups:put    | √           | √                  |

| Permission                                 | API                                                                    | Action              | IAM Project | Enterprise Project |
|--------------------------------------------|------------------------------------------------------------------------|---------------------|-------------|--------------------|
| Delete an IP address group                 | DELETE /v3/{project_id}/elb/ipgroups/{ipgroup_id}                      | elb:ipgroups:delete | √           | √                  |
| Update IP addresses in an IP address group | PUT /v3/{project_id}/elb/ipgroups/{ipgroup_id}/iplist/create-or-update | elb:ipgroups:put    | √           | √                  |
| Delete IP addresses in an IP address group | DELETE /v3/{project_id}/elb/ipgroups/{ipgroup_id}/iplist/batch-delete  | elb:ipgroups:put    | √           | √                  |

### 9.3.9 Certificate

| Permission           | API                                                    | Action                  | IAM Project | Enterprise Project |
|----------------------|--------------------------------------------------------|-------------------------|-------------|--------------------|
| Create a certificate | POST /v3/{project_id}/elb/certificates                 | elb:certificates:create | √           | √                  |
| Query a certificate  | GET /v3/{project_id}/elb/certificates/{certificate_id} | elb:certificates:get    | √           | √                  |
| Query certificates   | GET /v3/{project_id}/elb/certificates                  | elb:certificates:list   | √           | √                  |
| Modify a certificate | PUT /v3/{project_id}/elb/certificates/{certificate_id} | elb:certificates:put    | √           | √                  |

| Permission            | API                                                       | Action                  | IAM Project | Enterprise Project |
|-----------------------|-----------------------------------------------------------|-------------------------|-------------|--------------------|
| Deletes a certificate | DELETE /v3/{project_id}/elb/certificates/{certificate_id} | elb:certificates:delete | √           | √                  |

### 9.3.10 Security Policy

| Permission                       | API                                                         | Action                       | IAM Project | Enterprise Project |
|----------------------------------|-------------------------------------------------------------|------------------------------|-------------|--------------------|
| Creates a custom security policy | POST /v3/{project_id}/elb/security-policies                 | elb:security-policies:create | √           | √                  |
| Queries a custom security policy | GET /v3/{project_id}/elb/security-policies/{certificate_id} | elb:security-policies:get    | √           | √                  |
| Queries custom security policies | GET /v3/{project_id}/elb/security-policies                  | elb:security-policies:list   | √           | √                  |
| Updates a custom security policy | PUT /v3/{project_id}/elb/security-policies/{certificate_id} | elb:security-policies:put    | √           | √                  |



| Permission                       | API                                                            | Action                       | IAM Project | Enterprise Project |
|----------------------------------|----------------------------------------------------------------|------------------------------|-------------|--------------------|
| Deletes a custom security policy | DELETE /v3/{project_id}/elb/security-policies/{certificate_id} | elb:security-policies:delete | √           | √                  |
| Queries system security policies | GET /v3/{project_id}/elb/system-security-policies              | elb:security-policies:list   | √           | √                  |

### 9.3.11 Quota

| Permission                      | API                                     | Action          | IAM Project | Enterprise Project |
|---------------------------------|-----------------------------------------|-----------------|-------------|--------------------|
| Queries current resource quotas | GET /v3/{project_id}/elb/quotas         | elb:quotas:list | √           | √                  |
| Queries quota usage             | GET /v3/{project_id}/elb/quotas/details | elb:quotas:list | √           | √                  |

### 9.3.12 API Version

| Permi<br>ssion                        | API           | Action              | IAM<br>Project | Enterprise<br>Project |
|---------------------------------------|---------------|---------------------|----------------|-----------------------|
| Quer<br>ies the<br>API<br>versio<br>n | GET /versions | elb:quotas<br>:list | √              | x                     |

### 9.3.13 Availability Zone

| Permi<br>ssion  | API                                             | Action                              | IAM<br>Project | Enterprise<br>Project |
|-----------------|-------------------------------------------------|-------------------------------------|----------------|-----------------------|
| Quer<br>ies AZs | GET /v3/{project_id}/elb/<br>availability-zones | elb:availa<br>bility-<br>zones:list | √              | √                     |

### 9.3.14 Load Balancer Flavor

| Permi<br>ssion                                           | API                                              | Action               | IAM<br>Project | Enterprise<br>Project |
|----------------------------------------------------------|--------------------------------------------------|----------------------|----------------|-----------------------|
| Quer<br>ies<br>defaul<br>t<br>resour<br>ce<br>quota<br>s | GET /v3/{project_id}/elb/<br>flavors             | elb:flavors<br>:list | √              | x                     |
| Quer<br>ies<br>curren<br>t<br>resour<br>ce<br>quota<br>s | GET /v3/{project_id}/elb/<br>flavors/{flavor_id} | elb:flavors<br>:get  | √              | x                     |

### 9.3.15 Precautions for API Permissions

**elb:quotas:list** controls the fine-grained permission for quota display.

**elb:logtanks:create**, **elb:logtanks:list**, **elb:logtanks:get**, **elb:logtanks:put**, and **elb:logtanks:delete** control the fine-grained permission for log creation, log list query, log details query, log update, and log deletion.

The logging function relies on LTS, and the **lts:\*:get\*** and **lts:\*:list\*** permissions at the project level are required.

The monitoring function relies on Cloud Eye.

# 10 Historical APIs

## 10.1 Shared Load Balancer APIs (OpenStack) (Discarded)

### 10.1.1 Load Balancer

#### 10.1.1.1 Creating a Load Balancer

##### Function

This API is used to create a private network load balancer. After the load balancer is created, its details, such as load balancer ID, IP address, and subnet ID, are returned.

To create a public network load balancer, you also need to call the API for assigning an EIP and associate this IP address to the port bound to the IP address of the private network load balancer.

##### URI

POST /v2.0/lbaas/loadbalancers

##### Request

Table 10-1 Parameter description

| Parameter    | Mandatory | Type   | Description                                                                |
|--------------|-----------|--------|----------------------------------------------------------------------------|
| loadbalancer | Yes       | Object | Specifies the load balancer. For details, see <a href="#">Table 10-2</a> . |

**Table 10-2 loadbalancer** parameter description

| Parameter     | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                        |
|---------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name          | No        | String | Specifies the load balancer name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                               |
| description   | No        | String | Provides supplementary information about the load balancer.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                     |
| tenant_id     | No        | String | Specifies the ID of the project where the load balancer is used.<br>The value contains a maximum of 255 characters.<br>The value must be the same as the value of <b>project_id</b> in the token.                                                                                                                                                  |
| project_id    | No        | String | Specifies the ID of the project to which the load balancer belongs. This parameter has the same meaning as <b>tenant_id</b> .<br>The value must be the same as the value of <b>project_id</b> in the token.                                                                                                                                        |
| vip_subnet_id | Yes       | String | Specifies the ID of the IPv4 subnet where the load balancer works. You can obtain the value by calling the API for querying subnets ({VPC endpoint}/v2.0/subnets) using the GET method.<br>The private IP address of the load balancer is in this subnet.<br>Only IPv4 subnets are supported.                                                      |
| provider      | No        | String | Specifies the provider of the load balancer.<br>The value can only be <b>vlb</b> .                                                                                                                                                                                                                                                                 |
| vip_address   | No        | String | Specifies the private IP address of the load balancer.<br>This IP address must be the one in the subnet specified by <b>vip_subnet_id</b> . If this parameter is not specified, an IP address is automatically assigned to the load balancer from the subnet specified by <b>vip_subnet_id</b> .<br>The value contains a maximum of 64 characters. |

| Parameter      | Mandatory | Type    | Description                                                                                                                         |
|----------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | Specifies the administrative status of the load balancer.<br><br>This parameter is reserved, and the default value is <b>true</b> . |

## Response

**Table 10-3** Response parameters

| Parameter    | Type   | Description                                                                |
|--------------|--------|----------------------------------------------------------------------------|
| loadbalancer | Object | Specifies the load balancer. For details, see <a href="#">Table 10-4</a> . |

**Table 10-4** loadbalancer parameter description

| Parameter     | Type   | Description                                                                                                                   |
|---------------|--------|-------------------------------------------------------------------------------------------------------------------------------|
| id            | String | Specifies the load balancer ID.                                                                                               |
| project_id    | String | Specifies the ID of the project to which the load balancer belongs. This parameter has the same meaning as <b>tenant_id</b> . |
| tenant_id     | String | Specifies the ID of the project where the load balancer is used.<br><br>The value contains a maximum of 255 characters.       |
| name          | String | Specifies the load balancer name.<br><br>The value contains a maximum of 255 characters.                                      |
| description   | String | Provides supplementary information about the load balancer.<br><br>The value contains a maximum of 255 characters.            |
| vip_subnet_id | String | Specifies the ID of the IPv4 subnet where the load balancer works.                                                            |

| Parameter           | Type    | Description                                                                                                                                                                                                                                                   |
|---------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| vip_port_id         | String  | Specifies the ID of the port bound to the private IP address of the load balancer.<br><br>When you create a load balancer, the system automatically creates a port and associates it with a security group. However, the security group will not take effect. |
| provider            | String  | Specifies the provider of the load balancer.                                                                                                                                                                                                                  |
| vip_address         | String  | Specifies the private IP address of the load balancer.<br><br>The value contains a maximum of 64 characters.                                                                                                                                                  |
| listeners           | Array   | Lists the IDs of listeners added to the load balancer. For details, see <a href="#">Table 10-5</a> .                                                                                                                                                          |
| pools               | Array   | Lists the IDs of backend server groups associated with the load balancer. For details, see <a href="#">Table 10-6</a> .                                                                                                                                       |
| operating_status    | String  | Specifies the operating status of the load balancer.<br><br>This parameter is reserved, and its value can be <b>ONLINE</b> or <b>FROZEN</b> .                                                                                                                 |
| provisioning_status | String  | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br><br>It specifies the provisioning status of the load balancer.                                                                                                                       |
| admin_state_up      | Boolean | Specifies the administrative status of the load balancer.<br><br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>● <b>true</b>: Enabled</li><li>● <b>false</b>: Disabled</li></ul>           |
| tags                | Array   | Lists load balancer tags.                                                                                                                                                                                                                                     |

| Parameter  | Type   | Description                                                                                                                                                       |
|------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| created_at | String | Specifies the time when the load balancer was created.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.<br>The value contains a maximum of 19 characters. |
| updated_at | String | Specifies the time when the load balancer was updated.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.<br>The value contains a maximum of 19 characters. |

**Table 10-5** listeners parameter description

| Parameter | Type   | Description                                  |
|-----------|--------|----------------------------------------------|
| id        | String | Specifies the ID of the associated listener. |

**Table 10-6** pools parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

## Example Request

- Example request 1: Creating a private network load balancer

POST <https://{Endpoint}/v2.0/lbaas/loadbalancers>

```
{
 "loadbalancer": {
 "name": "loadbalancer1",
 "description": "simple lb",
 "tenant_id": "1867112d054b427e808cc6096d8193a1",
 "vip_subnet_id": "58077bdb-d470-424b-8c45-2e3c65060a5b",
 "vip_address": "192.168.0.100",
 "admin_state_up": true
 }
}
```

- Example request 2

Bind an EIP to the port that has been bound to the load balancer's private IP address based on [Example request 1: Creating a private network load balancer](#). For details about the parameters, see [Table 10-7](#).



**Table 10-7** Request parameters

| Parameter             | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-----------------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| publicip              | Yes       | Object | Specifies the EIP. For details, see <a href="#">Table 10-8</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| bandwidth             | Yes       | Object | Specifies the bandwidth. For details, see <a href="#">Table 10-9</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| enterprise_project_id | No        | String | <ul style="list-style-type: none"><li>Specifies the enterprise project ID. The value is <b>0</b> or a UUID that can contain a maximum of 36 characters, including hyphens (-).</li><li>When assigning an EIP, you need to bind an enterprise project ID to the EIP.</li><li>If this parameter is not specified, the default value is <b>0</b>.</li></ul> <b>NOTE</b><br>For more information about enterprise projects and how to obtain enterprise project IDs, see <a href="#">Enterprise Management User Guide</a> . |

**Table 10-8 publicip** parameter description

| Parameter  | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type       | Yes       | String  | <ul style="list-style-type: none"><li>Specifies the EIP type.</li><li>The value can be <b>5_telcom</b>, <b>5_union</b>, <b>5_bgp</b>, or <b>5_sbgp</b>.<ul style="list-style-type: none"><li>CN South-Guangzhou: <b>5_bgp</b> and <b>5_sbgp</b></li><li>CN East-Shanghai2: <b>5_bgp</b> and <b>5_sbgp</b></li><li>CN North-Beijing1: <b>5_bgp</b> and <b>5_sbgp</b></li><li>CN-Hong Kong: <b>5_bgp</b></li><li>CN Southwest-Guiyang1: <b>5_bgp</b> and <b>5_sbgp</b></li><li>CN North-Beijing4: <b>5_bgp</b> and <b>5_sbgp</b></li></ul></li><li>Note:<ul style="list-style-type: none"><li>The configured value must be supported by the system.</li><li><b>publicip_id</b> is an IPv4 port. If <b>publicip_type</b> is not specified, the default value is <b>5_bgp</b>.</li></ul></li></ul> |
| ip_version | No        | Integer | <ul style="list-style-type: none"><li>Specifies the EIP version.</li><li>The value can be <b>4</b> and <b>6</b>. <b>4</b> indicates an IPv4 address, and <b>6</b> indicates an IPv6 address.</li><li>Note:<ul style="list-style-type: none"><li>The configured value must be supported by the system.</li><li>If this parameter is left blank or is an empty string, an IPv4 address is assigned by default.</li></ul></li></ul>                                                                                                                                                                                                                                                                                                                                                               |
| ip_address | No        | String  | <ul style="list-style-type: none"><li>Specifies the EIP to be assigned. The system automatically assigns an EIP if you do not specify it.</li><li>The value must be a valid IPv4 address in the available IP address range.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

**Table 10-9 bandwidth** parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name      | No        | String | <ul style="list-style-type: none"><li>• Specifies the bandwidth name.</li><li>• The value can contain 1 to 64 characters that can contain letters, digits, underscores (_), hyphens (-), and periods (.).</li><li>• This parameter is mandatory when <b>share_type</b> is set to <b>PER</b>. This parameter will be ignored when <b>share_type</b> is set to <b>WHOLE</b> with an ID specified.</li></ul> |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| size      | No        | Integer | <ul style="list-style-type: none"><li>Specifies the bandwidth (Mbit/s).</li><li>The value ranges from <b>1</b> to <b>300</b> by default (The specific range may vary depending on the configuration in each region. You can see the bandwidth range of each region on the management console.)</li><li>This parameter is mandatory when <b>share_type</b> is set to <b>PER</b>. This parameter will be ignored when <b>share_type</b> is set to <b>WHOLE</b> with an ID specified.</li><li>The minimum unit for bandwidth adjustment varies depending on the bandwidth range. The details are as follows:<ul style="list-style-type: none"><li>The minimum increment is 1 Mbit/s if the allowed bandwidth ranges from 0 to 300 Mbit/s.</li><li>The minimum increment is 50 Mbit/s if the allowed bandwidth ranges from 301 Mbit/s to 1000 Mbit/s.</li><li>The minimum increment is 500 Mbit/s if the allowed bandwidth is greater than 1,000 Mbit/s.</li></ul></li></ul> |
| id        | No        | String  | <ul style="list-style-type: none"><li>Specifies the bandwidth ID. You can specify an existing shared bandwidth when assigning an EIP.</li><li>The value can be the ID of the shared bandwidth whose type is set to <b>WHOLE</b>.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                      |
|-------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| share_type  | Yes       | String | <ul style="list-style-type: none"><li>Specifies the bandwidth type.</li><li>Value options:<ul style="list-style-type: none"><li><b>PER</b>: indicates dedicated bandwidth.</li><li><b>WHOLE</b>: indicated shared bandwidth.</li></ul></li></ul> |
| charge_mode | No        | String | <ul style="list-style-type: none"><li>The default value is <b>traffic</b>. Currently, only billing by traffic is supported.</li></ul>                                                                                                            |

- Step 1: Apply for an EIP.

POST https://{VPCEndpoint}/v1/8b7e35ad379141fc9df3e178bd64f55c/publicips

```
{
 "publicip": {
 "type": "5_bgp",
 "ip_version": 4
 },
 "bandwidth": {
 "name": "bandwidth123",
 "size": 10,
 "share_type": "PER"
 }
}
```

- Example response

```
{
 "publicip": {
 "id": "f588ccfa-8750-4d7c-bf5d-2ede24414706",
 "status": "PENDING_CREATE",
 "type": "5_bgp",
 "public_ip_address": "139.9.204.183",
 "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
 "ip_version": 4,
 "create_time": "2019-06-29 06:45:32",
 "bandwidth_size": 1
 }
}
```

- Step 2: Bind the EIP. (The value of **public\_id** is the same as that in the [Example response](#), and the value of **port\_id** is the same as that of **vip\_port\_id** in [Example response 1](#).)

PUT /v1/8b7e35ad379141fc9df3e178bd64f55c/publicips/f588ccfa-8750-4d7c-bf5d-2ede24414706

```
{
 "publicip": {
 "port_id": "a7ecbdb5-5a63-41dd-a830-e16c0a7e04a7"
 }
}
```

- Example response

```
{
 "publicip": {
 "id": "f588ccfa-8750-4d7c-bf5d-2ede24414706",
 "status": "ACTIVE",
 "type": "5_bgp",
 "port_id": "a7ecbdb5-5a63-41dd-a830-e16c0a7e04a7",
 }
}
```

```
"public_ip_address": "139.9.204.183",
"private_ip_address": "192.168.1.131",
"tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
"create_time": "2019-06-29 07:33:18",
"bandwidth_size": 1,
"ip_version": 4
}
```

- After the preceding steps are complete, the load balancer has the capability of accessing the public network. You can access the load balancer using 139.9.204.183, the value of parameter **public\_ip\_address**.

## Example Response

- Example response 1

```
{
 "loadbalancer": {
 "description": "simple lb",
 "provisioning_status": "ACTIVE",
 "tenant_id": "1867112d054b427e808cc6096d8193a1",
 "project_id": "1867112d054b427e808cc6096d8193a1",
 "created_at": "2019-01-19T05:32:56",
 "admin_state_up": true,
 "updated_at": "2019-01-19T05:32:57",
 "id": "ea2843da-4026-49ec-8338-8fa015b067fc",
 "pools": [],
 "listeners": [],
 "vip_port_id": "a7ecbdb5-5a63-41dd-a830-e16c0a7e04a7",
 "operating_status": "ONLINE",
 "vip_address": "192.168.0.100",
 "vip_subnet_id": "58077bdb-d470-424b-8c45-2e3c65060a5b",
 "provider": "vlb",
 "tags": [],
 "name": "loadbalancer1"
 }
}
```

- Example response 2

POST https://{Endpoint}/v2.0/lbaas/loadbalancers

```
{
 "loadbalancer": {
 "name": "loadbalancer1",
 "description": "simple lb",
 "tenant_id": "1867112d054b427e808cc6096d8193a1",
 "vip_subnet_id": "58077bdb-d470-424b-8c45-2e3c65060a5b",
 "vip_address": "192.168.0.100",
 "admin_state_up": true
 }
}
```

After the preceding steps are complete, the load balancer has the capability of accessing the public network. You can access the load balancer using 139.9.204.183, the value of parameter **public\_ip\_address**.

## Status Code

For details, see [Status Codes](#).

### 10.1.1.2 Querying Load Balancers

#### Function

This API is used to query load balancers and display them in a list. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

#### Constraints

Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query. Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

#### URI

GET /v2.0/lbaas/loadbalancers

#### Request

**Table 10-10** Parameter description

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker       | No        | String  | Specifies the ID of the load balancer from which pagination query starts, that is, the ID of the last load balancer on the previous page.<br><br>This parameter must be used together with <b>limit</b> .                                                                                                                                                                                                                         |
| limit        | No        | Integer | Specifies the number of load balancers on each page.                                                                                                                                                                                                                                                                                                                                                                              |
| page_reverse | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br><br>This parameter must be used together with <b>limit</b> . |
| tenant_id    | No        | String  | Specifies the ID of the project where the load balancer is used.                                                                                                                                                                                                                                                                                                                                                                  |

| Parameter           | Mandatory | Type    | Description                                                                                                                               |
|---------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------|
| project_id          | No        | String  | Specifies the ID of the project to which the load balancer belongs. This parameter has the same meaning as <b>tenant_id</b> .             |
| id                  | No        | String  | Specifies the load balancer ID.                                                                                                           |
| description         | No        | String  | Provides supplementary information about the load balancer.<br>The value contains a maximum of 255 characters.                            |
| name                | No        | String  | Specifies the load balancer name.<br>The value contains a maximum of 255 characters.                                                      |
| operating_status    | No        | String  | Specifies the operating status of the load balancer.<br>This parameter is reserved, and its value can be <b>ONLINE</b> or <b>FROZEN</b> . |
| provisioning_status | No        | String  | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the load balancer.       |
| admin_state_up      | No        | Boolean | This parameter is reserved, and its value can only be <b>true</b> .<br>It specifies the administrative status of the load balancer.       |
| vip_address         | No        | String  | Specifies the private IP address of the load balancer.<br>The value contains a maximum of 64 characters.                                  |
| vip_port_id         | No        | String  | Specifies the ID of the port bound to the private IP address of the load balancer.                                                        |
| vip_subnet_id       | No        | String  | Specifies the ID of the IPv4 subnet where the load balancer works.                                                                        |
| member_address      | No        | String  | Specifies the IP address of the backend server associated with the load balancer.                                                         |
| member_device_id    | No        | String  | Specifies the ID of the cloud server used as the backend server associated with the load balancer.                                        |
| vpc_id              | No        | String  | Specifies the ID of the VPC where the load balancer works.                                                                                |



## Response

**Table 10-11** Response parameters

| Parameter           | Type  | Description                                                                                                                                                                                            |
|---------------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancers       | Array | Lists the load balancers. For details, see <a href="#">Table 10-12</a> .                                                                                                                               |
| loadbalancers_links | Array | Provides links to the previous or next page during pagination query, respectively. This parameter exists only in the response body of pagination query. For details, see <a href="#">Table 10-15</a> . |

**Table 10-12** loadbalancer parameter description

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                 |
|-------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name        | No        | String | Specifies the load balancer name.<br>The value contains a maximum of 255 characters.                                                                                                                        |
| description | No        | String | Provides supplementary information about the load balancer.<br>The value contains a maximum of 255 characters.                                                                                              |
| tenant_id   | No        | String | Specifies the ID of the project where the load balancer is used.<br>The value contains a maximum of 255 characters.<br>The value must be the same as the value of <b>project_id</b> in the token.           |
| project_id  | No        | String | Specifies the ID of the project to which the load balancer belongs. This parameter has the same meaning as <b>tenant_id</b> .<br>The value must be the same as the value of <b>project_id</b> in the token. |

| Parameter                   | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                     |
|-----------------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>vip_subnet_id</code>  | Yes       | String  | <p>Specifies the ID of the IPv4 subnet where the load balancer works. You can obtain the value by calling the API for querying subnets ({VPC endpoint}/v2.0/subnets) using the GET method.</p> <p>The private IP address of the load balancer is in this subnet.</p> <p>Only IPv4 subnets are supported. IPv6 subnets are not supported.</p>                    |
| <code>provider</code>       | No        | String  | <p>Specifies the provider of the load balancer.</p> <p>The value can only be <b>vlb</b>.</p>                                                                                                                                                                                                                                                                    |
| <code>vip_address</code>    | No        | String  | <p>Specifies the private IP address of the load balancer.</p> <p>This IP address must be the one in the subnet specified by <b>vip_subnet_id</b>. If this parameter is not specified, an IP address is automatically assigned to the load balancer from the subnet specified by <b>vip_subnet_id</b>.</p> <p>The value contains a maximum of 64 characters.</p> |
| <code>admin_state_up</code> | No        | Boolean | <p>Specifies the administrative status of the load balancer.</p> <p>This parameter is reserved. The default value is <b>true</b>.</p>                                                                                                                                                                                                                           |

**Table 10-13** listeners parameter description

| Parameter       | Type   | Description                                  |
|-----------------|--------|----------------------------------------------|
| <code>id</code> | String | Specifies the ID of the associated listener. |

**Table 10-14** pools parameter description

| Parameter       | Type   | Description                                              |
|-----------------|--------|----------------------------------------------------------|
| <code>id</code> | String | Specifies the ID of the associated backend server group. |

**Table 10-15** loadbalancers\_links parameter description

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                 |
|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| href      | String | Provides links to the previous or next page during pagination query, respectively.                                                                                                                                                                                                          |
| rel       | String | Specifies the prompt of the previous or next page.<br>The value can be <b>next</b> or <b>previous</b> . The value <b>next</b> indicates the Hypertext Reference (href) containing the URL of the next page, and <b>previous</b> indicates the href containing the URL of the previous page. |

## Example Request

- Example request 1: Querying all load balancers  
GET https://{Endpoint}/v2.0/lbaas/loadbalancers
- Example request 2: Querying load balancers by page (Each page contains one load balancer. The ID of the start load balancer is **165b6a38-5278-4569-b747-b2ee65ea84a4**. The load balancer after **165b6a38-5278-4569-b747-b2ee65ea84a4** is the queried load balancer.)  
GET https://{Endpoint}/v2.0/lbaas/loadbalancers?limit=1&marker=165b6a38-5278-4569-b747-b2ee65ea84a4
- Example request 3: Querying the load balancer using the IP address of a backend server (192.168.0.191)  
GET https://{Endpoint}/v2.0/lbaas/loadbalancers?member\_address=192.168.0.181

## Example Response

- Example response 1

```
{
 "loadbalancers": [
 {
 "description": "simple lb",
 "admin_state_up": true,
 "tenant_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "project_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "provisioning_status": "ACTIVE",
 "vip_subnet_id": "5328f1e6-ce29-44f1-9493-b128a5653350",
 "listeners": [
 {
 "id": "45196943-2907-4369-87b1-c009b1d7ac35"
 }
],
 "vip_address": "10.0.0.2",
 "vip_port_id": "cbced4fe-6f6f-4fd6-9348-0c3d1219d6ca",
 "provider": "vlb",
 "pools": [
 {
 "id": "21d49cf7-4fd3-4cb6-8c48-b7fc6c259aab"
 }
]
 }
],
}
```

```
 "id": "a9729389-6147-41a3-ab22-a24aed8692b2",
 "operating_status": "ONLINE",
 "tags": [],
 "name": "loadbalancer1",
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14"
 }
]
```

- Example response 2

```
{
 "loadbalancers": [
 {
 "description": "",
 "provisioning_status": "ACTIVE",
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "admin_state_up": true,
 "provider": "vlb",
 "pools": [
 {
 "id": "b13dba4c-a44c-4c40-8f6e-ce7a162b9f22"
 },
 {
 "id": "4b9e765f-82ee-4128-911b-0a2d9ebc74c7"
 }
],
 "listeners": [
 {
 "id": "21c41336-d0d3-4349-8641-6e82b4a4d097"
 }
],
 "vip_port_id": "44ac5d9b-b0c0-4810-9a9d-c4dbf541e47e",
 "operating_status": "ONLINE",
 "vip_address": "192.168.0.234",
 "vip_subnet_id": "9d60827e-0e5c-490a-8183-0b6ebf9084ca",
 "id": "e79a7dd6-3a38-429a-95f9-c7f78b346cbe",
 "tags": [],
 "name": "elb-robot",
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14"
 }
],
 "loadbalancers_links": [
 {
 "href": "https://network.Region.dc1.domainname.com/v2.0/lbaas/loadbalancers?limit=10&marker=e79a7dd6-3a38-429a-95f9-c7f78b346cbe&page_reverse=True",
 "rel": "previous"
 }
]
}
```

- Example response 3

```
{
 "loadbalancers": [
 {
 "description": "",
 "provisioning_status": "ACTIVE",
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "created_at": "2018-11-29T13:55:20",
 "admin_state_up": true,
 "update_at": "2018-11-29T13:55:21",
 "id": "c1127125-64a9-4394-a08a-ef3be8f7ef9c",
 "pools": [
 {
 "id": "2f6895be-019b-4c82-9b53-c4a2ac009e20"
 }
]
 }
],
}
```

```
"listeners": [
 {
 "id": "5c63d176-444f-4c75-9cfe-bcb8a05a845c"
 }
],
"vip_port_id": "434ac600-b779-4428-b7a7-830e047511f1",
"operating_status": "ONLINE",
"vip_address": "192.168.0.181",
"vip_subnet_id": "9a303536-417c-45dc-a6db-1234b9e1c2b2",
"provider": "vlb",
"tags": [],
"name": "elb-ftci"
}
]
```

## Status Code

For details, see [Status Codes](#).

### 10.1.1.3 Querying Details of a Load Balancer

## Function

This API is used to query details about a load balancer using its ID. You can also query the EIP bound to the load balancer based on the value of **vip\_port\_id**.

## URI

GET /v2.0/lbaas/loadbalancers/{loadbalancer\_id}

**Table 10-16** Parameter description

| Parameter       | Mandatory | Type   | Description                     |
|-----------------|-----------|--------|---------------------------------|
| loadbalancer_id | Yes       | String | Specifies the load balancer ID. |

## Request

None

## Response

**Table 10-17** Parameter description

| Parameter    | Type   | Description                                                                 |
|--------------|--------|-----------------------------------------------------------------------------|
| loadbalancer | Object | Specifies the load balancer. For details, see <a href="#">Table 10-18</a> . |

**Table 10-18 loadbalancer** parameter description

| Parameter           | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                   |
|---------------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name                | No        | String | Specifies the load balancer name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                          |
| description         | No        | String | Provides supplementary information about the load balancer.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                |
| provisioning_status | No        | String | This parameter is reserved.<br>Specifies the provisioning status of the load balancer. The value can be <b>ACTIVE</b> .                                                                                                                                                                                                       |
| tenant_id           | No        | String | Specifies the ID of the project where the load balancer is used.<br>The value contains a maximum of 255 characters.<br>The value must be the same as the value of <b>project_id</b> in the token.                                                                                                                             |
| project_id          | No        | String | Specifies the ID of the project where the load balancer is used. This parameter has the same meaning as <b>tenant_id</b> .<br>The value must be the same as the value of <b>project_id</b> in the token.                                                                                                                      |
| vip_subnet_id       | Yes       | String | Specifies the ID of the IPv4 subnet where the load balancer works. You can obtain the value by calling the API for querying subnets ({VPC endpoint}/v2.0/subnets) using the GET method.<br>The private IP address of the load balancer is in this subnet.<br>Only IPv4 subnets are supported. IPv6 subnets are not supported. |
| provider            | No        | String | Specifies the provider of the load balancer.<br>The value can only be <b>vlb</b> .                                                                                                                                                                                                                                            |

| Parameter                   | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                          |
|-----------------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <code>vip_address</code>    | No        | String  | Specifies the private IP address of the load balancer.<br><br>This IP address must be the one in the subnet specified by <b><code>vip_subnet_id</code></b> . If this parameter is not specified, an IP address is automatically assigned to the load balancer from the subnet specified by <b><code>vip_subnet_id</code></b> .<br><br>The value contains a maximum of 64 characters. |
| <code>admin_state_up</code> | No        | Boolean | Specifies the administrative status of the load balancer.<br><br>This parameter is reserved. The default value is <b>true</b> .                                                                                                                                                                                                                                                      |

**Table 10-19** listeners parameter description

| Parameter       | Type   | Description                                  |
|-----------------|--------|----------------------------------------------|
| <code>id</code> | String | Specifies the ID of the associated listener. |

**Table 10-20** pools parameter description

| Parameter       | Type   | Description                                              |
|-----------------|--------|----------------------------------------------------------|
| <code>id</code> | String | Specifies the ID of the associated backend server group. |

## Example Request

- Example request 1: Querying details of a load balancer using its ID
- Example request 2: Querying the EIP bound to the load balancer. For details, see [Querying EIPs](#).

GET https://{EIP\_Endpoint}/v1/{project\_id}/publicips?port\_id={vip\_port\_id}

**`vip_port_id`** is the value of **`vip_port_id`** for the load balancer.

## Example Response

- Example response 1

```
{
 "loadbalancer": {
 "description": "",
 "admin_state_up": true,
 "tenant_id": "1867112d054b427e808cc6096d8193a1",
 "project_id": "1867112d054b427e808cc6096d8193a1",
```

```
{
 "provisioning_status": "ACTIVE",
 "vip_subnet_id": "4f5e8efe-fbbe-405e-b48c-a41202ef697c",
 "listeners": [
 {
 "id": "09e64049-2ab0-4763-a8c5-f4207875dc3e"
 }
],
 "vip_address": "192.168.2.4",
 "vip_port_id": "c7157e7a-036a-42ca-8474-100be22e3727",
 "provider": "vlb",
 "pools": [
 {
 "id": "b7e53dbd-62ab-4505-a280-5c066078a5c9"
 }
],
 "id": "3d77894d-2ffe-4411-ac0a-0d57689779b8",
 "operating_status": "ONLINE",
 "tags": [],
 "name": "lb-2",
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14"
}
```

- Example response 2

```
{
 "publicips": [
 {
 "id": "6285e7be-fd9f-497c-bc2d-dd0bdea6efe0",
 "status": "DOWN",
 "profile": {
 "user_id": "35f2b308f5d64441a6fa7999fbcd4321",
 "product_id": "00301-48027-0--0",
 "region_id": "xxx",
 "order_id": "xxxxxxxx"
 },
 "type": "5_bgp",
 "public_ip_address": "161.xx.xx.9",
 "private_ip_address": "192.168.2.4",
 "tenant_id": "8b7e35ad379141fc9df3e178bd64f55c",
 "create_time": "2015-07-16 04:22:32",
 "bandwidth_id": "3fa5b383-5a73-4dcb-a314-c6128546d855",
 "bandwidth_share_type": "PER",
 "bandwidth_size": 5,
 "bandwidth_name": "bandwidth-test",
 "enterprise_project_id": "b261ac1f-2489-4bc7-b31b-c33c3346a439",
 "ip_version": 4,
 "port_id": "c7157e7a-036a-42ca-8474-100be22e3727"
 }
]
}
```

**public\_ip\_address** indicates the EIP bound to the load balancer.

## Status Code

For details, see [Status Codes](#).

### 10.1.1.4 Querying the Status Tree of a Load Balancer

#### Function

This API is used to query the status tree of a load balancer. You can use this API to query details about the associated listeners, backend server groups, backend servers, health checks, forwarding policies, and forwarding rules, helping you understand the topology of resources associated with the load balancer.



## URI

GET /v2.0/lbaas/loadbalancers/{loadbalancer\_id}/statuses

**Table 10-21** Parameter description

| Parameter       | Mandatory | Type   | Description                     |
|-----------------|-----------|--------|---------------------------------|
| loadbalancer_id | Yes       | String | Specifies the load balancer ID. |

## Request

None

## Response

**Table 10-22** Response parameters

| Parameter | Type   | Description                                                                                  |
|-----------|--------|----------------------------------------------------------------------------------------------|
| statuses  | Object | Specifies the status tree of a load balancer. For details, see <a href="#">Table 10-23</a> . |

**Table 10-23** statuses parameter description

| Parameter    | Type   | Description                                                                 |
|--------------|--------|-----------------------------------------------------------------------------|
| loadbalancer | Object | Specifies the load balancer. For details, see <a href="#">Table 10-24</a> . |

**Table 10-24** loadbalancer parameter description

| Parameter | Type   | Description                                                                                                      |
|-----------|--------|------------------------------------------------------------------------------------------------------------------|
| id        | String | Specifies the load balancer ID.                                                                                  |
| name      | String | Specifies the load balancer name.<br>The value contains a maximum of 255 characters.                             |
| listeners | Array  | Lists the listeners added to the load balancer. For details of this parameter, see <a href="#">Table 10-25</a> . |

| Parameter           | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pools               | Array  | Lists the backend server groups associated with the load balancer. For details of this parameter, see <a href="#">Table 10-26</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| operating_status    | String | <p>This field is reserved.</p> <p>It specifies the operating status of the load balancer. The value can be one of the following:</p> <ul style="list-style-type: none"><li>● <b>ONLINE</b> (default): The load balancer is running normally.</li><li>● <b>DEGRADED</b>: This status is displayed only when <b>provisioning_status</b> of a forwarding policy or forwarding rule added to a listener of the load balancer is set to <b>ERROR</b> and the API for querying the load balancer status tree is called.</li><li>● <b>DISABLED</b>: This status is displayed only when <b>admin_state_up</b> of the load balancer is set to <b>false</b> and the API for querying the load balancer status tree is called.</li><li>● <b>FROZEN</b>: The load balancer is frozen.</li></ul> |
| provisioning_status | String | <p>This parameter is reserved, and its value can only be <b>ACTIVE</b>.</p> <p>It specifies the provisioning status of the load balancer.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

**Table 10-25** listeners parameter description

| Parameter  | Type   | Description                                                                                            |
|------------|--------|--------------------------------------------------------------------------------------------------------|
| id         | String | Specifies the listener ID.                                                                             |
| name       | String | Specifies the listener name.                                                                           |
| l7policies | Array  | Lists associated forwarding policies. For details of this parameter, see <a href="#">Table 10-29</a> . |

| Parameter           | Type   | Description                                                                                                                    |
|---------------------|--------|--------------------------------------------------------------------------------------------------------------------------------|
| pools               | Array  | Lists the backend server groups associated with the listener. For details of this parameter, see <a href="#">Table 10-26</a> . |
| operating_status    | String | This parameter is reserved, and its value can only be <b>ONLINE</b> . It specifies the operating status of the listener.       |
| provisioning_status | String | This parameter is reserved, and its value can only be <b>ACTIVE</b> . It specifies the provisioning status of the listener.    |

**Table 10-26** pools parameter description

| Parameter           | Type   | Description                                                                                                                             |
|---------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------|
| id                  | String | Specifies the ID of the backend server group.                                                                                           |
| name                | String | Specifies the name of the backend server group.                                                                                         |
| healthmonitor       | Object | Provides health check details of the backend server group. For details of this parameter, see <a href="#">Table 10-27</a> .             |
| members             | Array  | Lists the members contained in the backend server group. For details of this parameter, see <a href="#">Table 10-28</a> .               |
| operating_status    | String | This parameter is reserved, and its value can only be <b>ONLINE</b> . It specifies the operating status of the backend server group.    |
| provisioning_status | String | This parameter is reserved, and its value can only be <b>ACTIVE</b> . It specifies the provisioning status of the backend server group. |

**Table 10-27 healthmonitor** parameter description

| Parameter           | Type   | Description                                                                                                                                                   |
|---------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id                  | String | Specifies the health check ID.                                                                                                                                |
| name                | String | Specifies the health check name.                                                                                                                              |
| type                | String | <ul style="list-style-type: none"><li>Specifies the health check protocol.</li><li>The value can be <b>UDP_CONNECT</b>, <b>TCP</b>, or <b>HTTP</b>.</li></ul> |
| provisioning_status | String | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the health check.                            |

**Table 10-28 members** parameter description

| Parameter     | Type    | Description                                                                            |
|---------------|---------|----------------------------------------------------------------------------------------|
| id            | String  | Specifies the backend server ID.                                                       |
| address       | String  | Specifies the private IP address of the backend server, for example, 192.168.3.11.     |
| protocol_port | Integer | Specifies the port used by the backend server. The port number ranges from 0 to 65535. |

| Parameter           | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|---------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status    | String | <p>This parameter is reserved. It specifies the operating status of the backend server. The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>ONLINE</b>: The backend server is running normally.</li><li>• <b>NO_MONITOR</b>: No health check is configured for the backend server group that the backend server belongs to.</li><li>• <b>DISABLED</b>: The backend server is not available. This status is displayed only when <b>admin_state_up</b> of the backend server, or the backend server group to which it belongs, or the associated load balancer is set to <b>false</b> and the API for querying the load balancer status tree is called.</li><li>• <b>OFFLINE</b>: The cloud server used as the backend server is stopped or does not exist.</li></ul> <p><b>NOTE</b><br/>When <b>admin_state_up</b> is set to <b>false</b> and <b>operating_status</b> is set to <b>OFFLINE</b> for a backend server, <b>DISABLED</b> is returned for <b>operating_status</b> of the backend server in the response of this API.</p> |
| provisioning_status | String | <p>This parameter is reserved, and its value can only be <b>ACTIVE</b>. It specifies the provisioning status of the backend server.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

**Table 10-29** l7policies parameter description

| Parameter | Type   | Description                           |
|-----------|--------|---------------------------------------|
| id        | String | Specifies the forwarding policy ID.   |
| name      | String | Specifies the forwarding policy name. |

| Parameter           | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rules               | Array  | Lists the forwarding rules of the forwarding policy. For details of this parameter, see <a href="#">Table 10-30</a> .                                                                                                                                                                                                                                                                                                                                            |
| action              | String | <ul style="list-style-type: none"><li>Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener.</li><li>The value can be <b>REDIRECT_TO_POOL</b> or <b>REDIRECT_TO_LISTENER</b>.<ul style="list-style-type: none"><li><b>REDIRECT_TO_POOL</b>: Requests are forwarded to another backend server group.</li><li><b>REDIRECT_TO_LISTENER</b>: Requests are redirected to an HTTPS listener.</li></ul></li></ul> |
| provisioning_status | String | This parameter is reserved.<br>It specifies the provisioning status of the forwarding policy. Value options: <ul style="list-style-type: none"><li><b>ACTIVE</b> (default): The forwarding policy is normal.</li><li><b>ERROR</b>: Another forwarding policy of the same listener has the same forwarding rule.</li></ul>                                                                                                                                        |

**Table 10-30** rules parameter description

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                             |
|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id        | String | Specifies the forwarding rule ID.                                                                                                                                                                                                                                                                                       |
| type      | String | <ul style="list-style-type: none"><li>Specifies the match type of a forwarding rule.</li><li>The value can be <b>PATH</b> or <b>HOST_NAME</b>.<ul style="list-style-type: none"><li><b>PATH</b>: matches the path in the request.</li><li><b>HOST_NAME</b>: matches the domain name in the request.</li></ul></li></ul> |

| Parameter           | Type   | Description                                                                                                                                                                                                                                                                                                                                                  |
|---------------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | String | <p>This parameter is reserved.</p> <p>It specifies the provisioning status of the forwarding rule. The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>ACTIVE</b> (default): The forwarding rule is normal.</li><li>• <b>ERROR</b>: Another forwarding policy of the same listener has the same forwarding rule.</li></ul> |

## Example Request

- Example request  
GET https://{Endpoint}/v2.0/lbaas/loadbalancers/38278031-cfca-44be-81be-a412f618773b/statuses

## Example Response

- Example response

```
{
 "statuses": {
 "loadbalancer": {
 "name": "lb-jy",
 "provisioning_status": "ACTIVE",
 "listeners": [
 {
 "name": "listener-jy-1",
 "provisioning_status": "ACTIVE",
 "pools": [
 {
 "name": "pool-jy-1",
 "provisioning_status": "ACTIVE",
 "healthmonitor": {
 "type": "TCP",
 "id": "7422b51a-0ed2-4702-9429-4f88349276c6",
 "name": "",
 "provisioning_status": "ACTIVE"
 },
 "members": [
 {
 "protocol_port": 80,
 "address": "192.168.44.11",
 "id": "7bbf7151-0dce-4087-b316-06c7fa17b894",
 "operating_status": "ONLINE",
 "provisioning_status": "ACTIVE"
 }
]
 }
],
 "id": "c54b3286-2349-4c5c-ade1-e6bb0b26ad18",
 "operating_status": "ONLINE"
 }
],
 "l7policies": [],
 "id": "eb84c5b4-9bc5-4bee-939d-3900fb05dc7b",
 "operating_status": "ONLINE"
 },
 "pools": [
```

```
{
 "name": "pool-jy-1",
 "provisioning_status": "ACTIVE",
 "healthmonitor": {
 "type": "TCP",
 "id": "7422b51a-0ed2-4702-9429-4f88349276c6",
 "name": "",
 "provisioning_status": "ACTIVE"
 },
 "members": [
 {
 "protocol_port": 80,
 "address": "192.168.44.11",
 "id": "7bbf7151-0dce-4087-b316-06c7fa17b894",
 "operating_status": "ONLINE",
 "provisioning_status": "ACTIVE"
 }
],
 "id": "c54b3286-2349-4c5c-ade1-e6bb0b26ad18",
 "operating_status": "ONLINE"
},
{
 "id": "38278031-cfca-44be-81be-a412f618773b",
 "operating_status": "ONLINE"
}
}
```

Status Code

For details, see [Status Codes](#).

10.1.1.5 Updating a Load Balancer

Function

This API is used to update the name or description of a load balancer.

URI

PUT /v2.0/lbaas/loadbalancers/{loadbalancer\_id}

Table 10-31 Parameter description

| Parameter       | Mandatory | Type   | Description                     |
|-----------------|-----------|--------|---------------------------------|
| loadbalancer_id | Yes       | String | Specifies the load balancer ID. |

Request

Table 10-32 Parameter description

| Parameter    | Mandatory | Type   | Description                                                                 |
|--------------|-----------|--------|-----------------------------------------------------------------------------|
| loadbalancer | Yes       | Object | Specifies the load balancer. For details, see <a href="#">Table 10-33</a> . |



**Table 10-33 loadbalancer** parameter description

| Parameter      | Mandatory | Type    | Description                                                                                                                 |
|----------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------|
| name           | No        | String  | Specifies the load balancer name.<br>The value contains a maximum of 255 characters.                                        |
| description    | No        | String  | Provides supplementary information about the load balancer.<br>The value contains a maximum of 255 characters.              |
| admin_state_up | No        | Boolean | Specifies the administrative status of the load balancer.<br>This parameter is reserved. The default value is <b>true</b> . |

## Response

**Table 10-34** Response parameters

| Parameter    | Type   | Description                                                                 |
|--------------|--------|-----------------------------------------------------------------------------|
| loadbalancer | Object | Specifies the load balancer. For details, see <a href="#">Table 10-35</a> . |

**Table 10-35 loadbalancer** parameter description

| Parameter  | Type   | Description                                                                                                                   |
|------------|--------|-------------------------------------------------------------------------------------------------------------------------------|
| id         | String | Specifies the load balancer ID.                                                                                               |
| project_id | String | Specifies the ID of the project to which the load balancer belongs. This parameter has the same meaning as <b>tenant_id</b> . |

| Parameter     | Type   | Description                                                                                                                                                                                                                                               |
|---------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id     | String | Specifies the ID of the project where the load balancer is used.<br>The value contains a maximum of 255 characters.                                                                                                                                       |
| name          | String | Specifies the load balancer name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                      |
| description   | String | Provides supplementary information about the load balancer.<br>The value contains a maximum of 255 characters.                                                                                                                                            |
| vip_subnet_id | String | Specifies the ID of the IPv4 subnet where the load balancer works.                                                                                                                                                                                        |
| vip_port_id   | String | Specifies the ID of the port bound to the private IP address of the load balancer.<br>When you create a load balancer, the system automatically creates a port and associates it with a security group. However, the security group will not take effect. |
| provider      | String | Specifies the provider of the load balancer.                                                                                                                                                                                                              |
| vip_address   | String | Specifies the private IP address of the load balancer.<br>The value contains a maximum of 64 characters.                                                                                                                                                  |
| listeners     | Array  | Lists the IDs of listeners added to the load balancer. For details, see <a href="#">Table 10-5</a> .                                                                                                                                                      |
| pools         | Array  | Lists the IDs of backend server groups associated with the load balancer. For details, see <a href="#">Table 10-6</a> .                                                                                                                                   |

| Parameter           | Type    | Description                                                                                                                                                                                                                                     |
|---------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| operating_status    | String  | Specifies the operating status of the load balancer.<br>This parameter is reserved, and its value can be <b>ONLINE</b> or <b>FROZEN</b> .                                                                                                       |
| provisioning_status | String  | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the load balancer.                                                                                                             |
| admin_state_up      | Boolean | Specifies the administrative status of the load balancer.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul> |
| tags                | Array   | Lists load balancer tags.                                                                                                                                                                                                                       |
| created_at          | String  | Specifies the time when the load balancer was created.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.<br>The value contains a maximum of 19 characters.                                                                               |
| updated_at          | String  | Specifies the time when the load balancer was updated.<br>The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.<br>The value contains a maximum of 19 characters.                                                                               |

**Table 10-36 listeners** parameter description

| Parameter | Type   | Description                                  |
|-----------|--------|----------------------------------------------|
| id        | String | Specifies the ID of the associated listener. |

**Table 10-37 pools** parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

## Example Request

- Example request: Modifying the load balancer name and description  
PUT https://{Endpoint}/v2.0/lbaas/loadbalancers/1e11b74e-30b7-4b78-b09b-84aec4a04487

```
{
 "loadbalancer": {
 "name": "lb_update_test",
 "description": "lb update test"
 }
}
```

## Example Response

- Example response

```
{
 "loadbalancer": {
 "description": "simple lb2",
 "admin_state_up": true,
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "provisioning_status": "ACTIVE",
 "vip_subnet_id": "823d5866-6e30-45c2-9b1a-a1ebc3757fdb",
 "listeners": [
 {
 "id": "37ffe679-08ef-436e-b6bd-cf66fb4c3de2"
 }
],
 "vip_address": "192.172.1.68",
 "vip_port_id": "f42e3019-67f7-4d2a-8d1c-af49e7c22fa6",
 "tags": [],
 "provider": "vlb",
 "pools": [
 {
 "id": "75c4f2d4-a213-4408-9fa8-d64708e8d1df"
 }
],
 "id": "c32a9f9a-0cc6-4f38-bb9c-cde79a533c19",
 "operating_status": "ONLINE",
 "name": "loadbalancer-test2",
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14"
 }
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.1.6 Deleting a Load Balancer

#### Function

This API is used to delete a specific load balancer.

#### Constraints

All listeners added to the load balancer must be deleted before the load balancer is deleted.

#### URI

DELETE /v2.0/lbaas/loadbalancers/{loadbalancer\_id}

Table 10-38 Parameter description

| Parameter       | Mandatory | Type    | Description                                                                                                                                                                                            |
|-----------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancer_id | Yes       | String  | Specifies the load balancer ID.                                                                                                                                                                        |
| cascade         | No        | Boolean | <b>[Discarded]</b> Specifies whether to delete the resources associated with the load balancer when the load balancer is deleted, including the listeners, backend server groups, and backend servers. |

Request

None

Response

None

Example Request

Example request: Deleting a load balancer  
DELETE https://{endpoint}/v2.0/lbaas/loadbalancers/90f7c765-0bc9-47c4-8513-4cc0c264c8f8

Example Response

Example response  
None

Status Code

For details, see [Status Codes](#).

10.1.2 Listener

10.1.2.1 Adding a Listener

Function

This API is used to add a listener to a load balancer.

URI

POST /v2.0/lbaas/listeners

## Request

**Table 10-39** Parameter description

| Parameter | Mandatory | Type   | Description                                                            |
|-----------|-----------|--------|------------------------------------------------------------------------|
| listener  | Yes       | Object | Specifies the listener. For details, see <a href="#">Table 10-40</a> . |

**Table 10-40** listener parameter description

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id   | No        | String | Specifies the ID of the project where the listener is used.<br><br>The value must be the same as the value of <b>project_id</b> in the token.<br><br>The value contains a maximum of 255 characters.       |
| project_id  | No        | String | Specifies the ID of the project to which the listener belongs. This parameter has the same meaning as <b>tenant_id</b> .<br><br>The value must be the same as the value of <b>project_id</b> in the token. |
| name        | No        | String | Specifies the listener name.<br>The value contains a maximum of 255 characters.                                                                                                                            |
| description | No        | String | Provides supplementary information about the listener.<br>The value contains a maximum of 255 characters.                                                                                                  |
| protocol    | Yes       | String | Specifies the protocol used by the listener.<br><br>The value can be <b>TCP</b> , <b>HTTP</b> , <b>UDP</b> , or <b>TERMINATED_HTTPS</b> .                                                                  |

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                     |
|------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol_port    | Yes       | Integer | <p>Specifies the port used by the listener.</p> <p>The port number ranges from 1 to 65535.</p> <p><b>NOTE</b><br/>If the protocol used by the listener is UDP, the port number cannot be 4789.</p>                                                                                                                                                                              |
| loadbalancer_id  | Yes       | String  | <p>Specifies the ID of the associated load balancer.</p>                                                                                                                                                                                                                                                                                                                        |
| connection_limit | No        | Integer | <p>Specifies the maximum number of connections.</p> <p>The value ranges from <b>-1</b> to <b>2147483647</b>. The default value is <b>-1</b>, indicating that there is no restriction on the maximum number of connections.</p> <p>This parameter is reserved.</p>                                                                                                               |
| admin_state_up   | No        | Boolean | <p>Specifies the administrative status of the listener.</p> <p>This parameter is reserved, and the default value is <b>true</b>.</p>                                                                                                                                                                                                                                            |
| http2_enable     | No        | Boolean | <p>Specifies whether to use HTTP/2.</p> <p>The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: HTTP/2 is used.</li><li>• <b>false</b>: HTTP/2 is not used.</li></ul> <p>The default value is <b>false</b>.</p> <p>This parameter is valid only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b>.</p> |

| Parameter       | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| default_pool_id | No        | String | <p>Specifies the ID of the associated backend server group.</p> <p>If a request does not match the forwarding policy, the request is forwarded to the default backend server group for processing. If the value is <b>null</b>, the listener has no default backend server group.</p> <p>This parameter has the following constraints:</p> <ul style="list-style-type: none"><li>• Its value cannot be the ID of any backend server group of other listeners.</li><li>• Its value cannot be the ID of any backend server group associated with the forwarding policies set for other listeners.</li></ul> <p>The relationships between the protocol used by the listener and the protocol of the backend server group are as follows:</p> <ul style="list-style-type: none"><li>• When the protocol used by the listener is <b>TCP</b>, the protocol of the backend server group must be <b>TCP</b>.</li><li>• When the protocol used by the listener is <b>UDP</b>, the protocol of the backend server group must be <b>UDP</b>.</li><li>• When the protocol used by the listener is <b>HTTP</b> or <b>TERMINATED_HTTPS</b>, the protocol of the backend server group must be <b>HTTP</b>.</li></ul> |



| Parameter                   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| default_tls_container_ref   | No        | String | <p>Specifies the ID of the server certificate used by the listener.</p> <p>This parameter is mandatory when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b>.</p> <p>The default value is <b>null</b> when <b>protocol</b> is not set to <b>TERMINATED_HTTPS</b>.</p> <p>The value contains a maximum of 128 characters.</p> <p><b>NOTE</b><br/>This parameter is valid only when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b>.</p> |
| client_ca_tls_container_ref | No        | String | <p>Specifies the ID of the CA certificate used by the listener.</p> <p>The default value is <b>null</b>.</p> <p>The value contains a maximum of 128 characters.</p> <p><b>NOTE</b><br/>This parameter is valid only when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b>.</p>                                                                                                                                                           |
| sni_container_refs          | No        | Array  | <p>Lists the IDs of SNI certificates (server certificates with domain names) used by the listener.</p> <p>If the parameter value is an empty list, the SNI feature is disabled.</p> <p>The default value is [].</p> <p><b>NOTE</b><br/>This parameter is valid only when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b>.</p>                                                                                                           |
| tls_ciphers_policy          | No        | String | <p>Specifies the security policy used by the listener. This parameter is valid only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b>.</p> <p>The value can be <b>tls-1-0-inherit</b>, <b>tls-1-0</b>, <b>tls-1-1</b>, <b>tls-1-2</b>, or <b>tls-1-2-strict</b>, and the default value is <b>tls-1-0</b>. For details of cipher suites for each security policy, see <a href="#">Table 10-41</a>.</p>              |

**Table 10-41** `tls_ciphers_policy` parameter description

| Security Policy | TLS Version                | Cipher Suite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-0-inherit | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA:DHE-DSS-AES128-SHA:CAMELLIA128-SHA:EDH-RSA-DES-CBC3-SHA:DES-CBC3-SHA:ECDHE-RSA-RC4-SHA:RC4-SHA:DHE-RSA-AES256-SHA:DHE-DSS-AES256-SHA:DHE-RSA-CAMELLIA256-SHA:DHE-DSS-CAMELLIA256-SHA:EDH-DSS-DES-CBC3-SHA:DHE-RSA-CAMELLIA128-SHA:DHE-DSS-CAMELLIA128-SHA |
| tls-1-0         | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA                                                                                                                                                                                                                                                                              |
| tls-1-1         | TLS 1.2 TLS 1.1            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tls-1-2         | TLS 1.2                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tls-1-2-strict  | TLS 1.2                    | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA                                                                                                                                                                                                                                                                              |

## Response

**Table 10-42** Response parameters

| Parameter | Type   | Description                                                            |
|-----------|--------|------------------------------------------------------------------------|
| listener  | Object | Specifies the listener. For details, see <a href="#">Table 10-43</a> . |

**Table 10-43** listeners parameter description

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                            |
|------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id               | String  | Specifies the listener ID.                                                                                                                                                                                                                                                             |
| tenant_id        | String  | Specifies the ID of the project where the listener is used.                                                                                                                                                                                                                            |
| project_id       | String  | Specifies the ID of the project to which the listener belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                               |
| name             | String  | Specifies the listener name.                                                                                                                                                                                                                                                           |
| description      | String  | Provides supplementary information about the listener.                                                                                                                                                                                                                                 |
| protocol         | String  | Specifies the protocol used by the listener.<br>The value can be <b>TCP</b> , <b>HTTP</b> , <b>UDP</b> , or <b>TERMINATED_HTTPS</b> .                                                                                                                                                  |
| protocol_port    | Integer | Specifies the port used by the listener.<br>The port number ranges from 1 to 65535.                                                                                                                                                                                                    |
| loadbalancers    | Array   | Specifies the ID of the associated load balancer. For details, see <a href="#">Table 10-44</a> .                                                                                                                                                                                       |
| connection_limit | Integer | Specifies the maximum number of connections.<br>The value ranges from <b>-1</b> to <b>2147483647</b> . The default value is <b>-1</b> , indicating that there is no restriction on the maximum number of connections.<br>This parameter is reserved.                                   |
| admin_state_up   | Boolean | Specifies the administrative status of the listener.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>● <b>true</b>: The load balancer is enabled.</li><li>● <b>false</b>: The load balancer is disabled.</li></ul> |

| Parameter                   | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| http2_enable                | Boolean | <p>Specifies whether to use HTTP/2.<br/>The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: HTTP/2 is used.</li><li>• <b>false</b>: HTTP/2 is not used.</li></ul> <p>This parameter is valid only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b>.</p>                                                                                           |
| default_pool_id             | String  | <p>Specifies the ID of the associated backend server group.</p> <p>If a request does not match the forwarding policy, the request is forwarded to the default backend server group for processing. If the value is <b>null</b>, the listener has no default backend server group.</p>                                                                                                                                        |
| default_tls_container_ref   | String  | <p>Specifies the ID of the server certificate used by the listener. For details, see <a href="#">Certificate</a>.</p> <p>This parameter is mandatory when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b>.</p>                                                                                                                                                                                                             |
| client_ca_tls_container_ref | String  | <p>Specifies the ID of the CA certificate used by the listener. For details, see <a href="#">Certificate</a>.</p>                                                                                                                                                                                                                                                                                                            |
| sni_container_refs          | Array   | <p>Lists the IDs of SNI certificates (server certificates with domain names) used by the listener.</p> <p>If the parameter value is an empty list, the SNI feature is disabled.</p>                                                                                                                                                                                                                                          |
| tags                        | Array   | <p>Tags the listener.</p>                                                                                                                                                                                                                                                                                                                                                                                                    |
| created_at                  | String  | <p>Specifies the time when the listener was created. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.</p>                                                                                                                                                                                                                                                                                                               |
| updated_at                  | String  | <p>Specifies the time when the listener was updated. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.</p>                                                                                                                                                                                                                                                                                                               |
| tls_ciphers_policy          | String  | <p>Specifies the security policy used by the listener. This parameter is valid only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b>.</p> <p>The value can be <b>tls-1-0-inherit</b>, <b>tls-1-0</b>, <b>tls-1-1</b>, <b>tls-1-2</b>, or <b>tls-1-2-strict</b>, and the default value is <b>tls-1-0</b>. For details of cipher suites for each security policy, see <a href="#">Table 10-41</a>.</p> |

**Table 10-44 loadbalancers** parameter description

| Parameter | Type   | Description                                       |
|-----------|--------|---------------------------------------------------|
| id        | String | Specifies the ID of the associated load balancer. |

## Example Request

- Example request 1: Adding a TCP listener

POST https://{Endpoint}/v2.0/lbaas/listeners

```
{
 "listener": {
 "protocol_port": 80,
 "protocol": "TCP",
 "loadbalancer_id": "0416b6f1-877f-4a51-987e-978b3f084253",
 "name": "listener-test",
 "admin_state_up": true
 }
}
```

- Example request 2: Adding an HTTPS listener

POST https://{Endpoint}/v2.0/lbaas/listeners

```
{
 "listener": {
 "protocol_port": 25,
 "protocol": "TERMINATED_HTTPS",
 "default_tls_container_ref": "02dcd56799e045bf8b131533cc911dd6",
 "loadbalancer_id": "0416b6f1-877f-4a51-987e-978b3f084253",
 "name": "listener-test",
 "admin_state_up": true
 }
}
```

## Example Response

- Example response 1

```
{
 "listener": {
 "protocol_port": 80,
 "protocol": "TCP",
 "description": "",
 "client_ca_tls_container_ref": null,
 "default_tls_container_ref": null,
 "admin_state_up": true,
 "http2_enable": false,
 "loadbalancers": [
 {
 "id": "0416b6f1-877f-4a51-987e-978b3f084253"
 }
],
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "sni_container_refs": [],
 "connection_limit": -1,
 "default_pool_id": null,
 "tags": [],
 "id": "b7f32b52-6f17-4b16-9ec8-063d71b653ce",
 "name": "listener-test",
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14"
 }
}
```

```
}
}
```

- Example response 2

```
{
 "listener": {
 "protocol_port": 25,
 "protocol": "TERMINATED_HTTPS",
 "description": "",
 "default_tls_container_ref": "02dcd56799e045bf8b131533cc911dd6",
 "sni_container_refs": [],
 "loadbalancers": [
 {
 "id": "0416b6f1-877f-4a51-987e-978b3f084253"
 }
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "created_at": "2019-01-21T12:38:31",
 "client_ca_tls_container_ref": null,
 "connection_limit": -1,
 "updated_at": "2019-01-21T12:38:31",
 "http2_enable": false,
 "admin_state_up": true,
 "default_pool_id": null,
 "id": "b56634cd-5ba8-460e-b5a2-6de5ba8eaf60",
 "tags": [],
 "name": "listener-test"
 }
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.2.2 Querying Listeners

#### Function

This API is used to query the listeners and display them in a list. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

You can query listeners using information such as listener ID, protocol used by the listener, port used by the listener, or backend server private IP address.

#### Constraints

Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query. Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

#### URI

GET /v2.0/lbaas/listeners

## Request

**Table 10-45** Parameter description

| Parameter       | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker          | No        | String  | Specifies the ID of the listener from which pagination query starts, that is, the ID of the last listener on the previous page.<br><br>This parameter must be used together with <b>limit</b> .                                                                                                                                                                                                                                   |
| limit           | No        | Integer | Specifies the number of listeners on each page.                                                                                                                                                                                                                                                                                                                                                                                   |
| page_reverse    | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br><br>This parameter must be used together with <b>limit</b> . |
| id              | No        | String  | Specifies the listener ID.                                                                                                                                                                                                                                                                                                                                                                                                        |
| tenant_id       | No        | String  | Specifies the ID of the project where the listener is used.                                                                                                                                                                                                                                                                                                                                                                       |
| project_id      | No        | String  | Specifies the ID of the project to which the listener belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                          |
| name            | No        | String  | Specifies the listener name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                   |
| description     | No        | String  | Provides supplementary information about the listener.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                         |
| loadbalancer_id | No        | String  | Specifies the ID of the associated load balancer.                                                                                                                                                                                                                                                                                                                                                                                 |

| Parameter                   | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| connection_limit            | No        | Integer | Specifies the maximum number of connections.                                                                                                                                                                                                                                                                                                           |
| admin_state_up              | No        | Boolean | Specifies the administrative status of the listener.<br>This parameter is reserved, and the default value is <b>true</b> .                                                                                                                                                                                                                             |
| default_pool_id             | No        | String  | Specifies the ID of the associated backend server group.                                                                                                                                                                                                                                                                                               |
| http2_enable                | No        | Boolean | Specifies whether to use HTTP/2.<br>The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: HTTP/2 is used.</li><li>• <b>false</b>: HTTP/2 is not used.</li></ul>                                                                                                                                          |
| default_tls_container_ref   | No        | String  | Specifies the ID of the server certificate used by the listener.<br>The value contains a maximum of 128 characters.                                                                                                                                                                                                                                    |
| client_ca_tls_container_ref | No        | String  | Specifies the ID of the CA certificate used by the listener.<br>The value contains a maximum of 128 characters.                                                                                                                                                                                                                                        |
| protocol                    | No        | String  | Specifies the protocol used by the listener.<br>The value can be <b>TCP</b> , <b>HTTP</b> , <b>UDP</b> , or <b>TERMINATED_HTTPS</b> .                                                                                                                                                                                                                  |
| protocol_port               | No        | Integer | Specifies the port used by the listener.                                                                                                                                                                                                                                                                                                               |
| tls_ciphers_policy          | No        | String  | Specifies the security policy used by the listener. This parameter is valid only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> .<br>The value can be <b>tls-1-0</b> , <b>tls-1-1</b> , <b>tls-1-2</b> , or <b>tls-1-2-strict</b> . For details of cipher suites for each security policy, see <a href="#">Table 10-46</a> . |
| tls_container_id            | No        | String  | Queries the listener associated with the certificate.                                                                                                                                                                                                                                                                                                  |



| Parameter          | Mandatory | Type   | Description                                               |
|--------------------|-----------|--------|-----------------------------------------------------------|
| sni_container_refs | No        | String | Queries the listener associated with the SNI certificate. |

**Table 10-46** `tls_ciphers_policy` parameter description

| Security Policy | TLS Version                | Cipher Suite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-0-inherit | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA:DHE-DSS-AES128-SHA:CAMELLIA128-SHA:EDH-RSA-DES-CBC3-SHA:DES-CBC3-SHA:ECDHE-RSA-RC4-SHA:RC4-SHA:DHE-RSA-AES256-SHA:DHE-DSS-AES256-SHA:DHE-RSA-CAMELLIA256-SHA:DHE-DSS-CAMELLIA256-SHA:CAMELLIA256-SHA:EDH-DSS-DES-CBC3-SHA:DHE-RSA-CAMELLIA128-SHA:DHE-DSS-CAMELLIA128-SHA |
| tls-1-0         | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA                                                                                                                                                                                                                                                                                              |
| tls-1-1         | TLS 1.2 TLS 1.1            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tls-1-2         | TLS 1.2                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tls-1-2-strict  | TLS 1.2                    | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384                                                                                                                                                                                                                                                                                                                                                                                                            |

## Response

**Table 10-47** Parameter description

| Parameter       | Type  | Description                                                                                                                                                                                            |
|-----------------|-------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listeners       | Array | Lists the listeners. For details, see <a href="#">Table 10-48</a> .                                                                                                                                    |
| listeners_links | Array | Provides links to the previous or next page during pagination query, respectively. This parameter exists only in the response body of pagination query. For details, see <a href="#">Table 10-51</a> . |

**Table 10-48** listeners parameter description

| Parameter     | Type    | Description                                                                                                                           |
|---------------|---------|---------------------------------------------------------------------------------------------------------------------------------------|
| id            | String  | Specifies the listener ID.                                                                                                            |
| tenant_id     | String  | Specifies the ID of the project where the listener is used.<br>The value contains a maximum of 255 characters.                        |
| project_id    | String  | Specifies the ID of the project to which the listener belongs.<br>This parameter has the same meaning as <b>tenant_id</b> .           |
| name          | String  | Specifies the listener name.<br>The value contains a maximum of 255 characters.                                                       |
| description   | String  | Provides supplementary information about the listener.<br>The value contains a maximum of 255 characters.                             |
| protocol      | String  | Specifies the protocol used by the listener.<br>The value can be <b>TCP</b> , <b>HTTP</b> , <b>UDP</b> , or <b>TERMINATED_HTTPS</b> . |
| protocol_port | Integer | Specifies the port used by the listener.<br>The port number ranges from 1 to 65535.                                                   |
| loadbalancers | Array   | Specifies the ID of the associated load balancer.                                                                                     |

| Parameter         | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|-------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| connection_limit  | Integer | <p>Specifies the maximum number of connections.</p> <p>The value ranges from <b>-1</b> to <b>2147483647</b>.</p> <p><b>NOTE</b></p> <p>This parameter is reserved. The default value is <b>-1</b>, indicating that there is no restriction on the maximum number of connections.</p>                                                                                                                                                                             |
| admin_state_up    | Boolean | <p>Specifies the administrative status of the listener.</p> <p>This parameter is reserved. The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                             |
| http2_enable      | Boolean | <p>Specifies whether to use HTTP/2.</p> <p>The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: HTTP/2 will be used.</li><li>• <b>false</b>: HTTP/2 will not be used.</li></ul> <p><b>NOTE</b></p> <p>This parameter is valid only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b>.</p>                                                                                               |
| keepalive_timeout | Integer | <p>Specifies the idle timeout duration in the unit of second.</p> <p>This parameter applies only to TCP, HTTP, or HTTPS listeners.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• TCP listeners: The value ranges from <b>10</b> to <b>4000</b>, and the default value is <b>300</b>.</li><li>• HTTP or HTTPS listeners: The value ranges from <b>0</b> to <b>4000</b>, and the default value is <b>60</b>.</li></ul> |

| Parameter                 | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| client_timeout            | Integer | <p>Specifies the request timeout duration in the unit of second.</p> <p>The value ranges from <b>1</b> to <b>300</b>. The default value is <b>60</b>.</p> <p>This parameter is valid only when <b>protocol</b> is set to <b>HTTP</b> or <b>HTTPS</b>. In other cases, the request body does not contain this parameter. Otherwise, an error is reported. When <b>protocol</b> is set to <b>HTTP</b> or <b>HTTPS</b>, if the request body does not contain this parameter or the value of this parameter is <b>null</b>, the default value is used.</p>  |
| member_timeout            | Integer | <p>Specifies the response timeout duration in the unit of second.</p> <p>The value ranges from <b>1</b> to <b>300</b>. The default value is <b>60</b>.</p> <p>This parameter is valid only when <b>protocol</b> is set to <b>HTTP</b> or <b>HTTPS</b>. In other cases, the request body does not contain this parameter. Otherwise, an error is reported. When <b>protocol</b> is set to <b>HTTP</b> or <b>HTTPS</b>, if the request body does not contain this parameter or the value of this parameter is <b>null</b>, the default value is used.</p> |
| default_pool_id           | String  | <p>Specifies the ID of the associated backend server group.</p> <p><b>NOTE</b></p> <p>If a request does not match the forwarding policy, the request is forwarded to the default backend server group for processing. If the value is <b>null</b>, the listener has no default backend server group.</p>                                                                                                                                                                                                                                                |
| default_tls_container_ref | String  | <p>Specifies the ID of the server certificate used by the listener.</p> <p>This parameter is mandatory when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b>.</p> <p>The value contains a maximum of 128 characters.</p>                                                                                                                                                                                                                                                                                                                               |

| Parameter                   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                               |
|-----------------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| client_ca_tls_container_ref | String | Specifies the ID of the CA certificate used by the listener.<br>The value contains a maximum of 128 characters.                                                                                                                                                                                                                                                                                                           |
| sni_container_refs          | Array  | Lists the IDs of SNI certificates (server certificates with domain names) used by the listener.                                                                                                                                                                                                                                                                                                                           |
| tags                        | Array  | Tags the listener.                                                                                                                                                                                                                                                                                                                                                                                                        |
| created_at                  | String | Specifies the time when the listener was created. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.<br>The value contains a maximum of 19 characters.                                                                                                                                                                                                                                                                 |
| updated_at                  | String | Specifies the time when the listener was updated. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.<br>The value contains a maximum of 19 characters.                                                                                                                                                                                                                                                                 |
| listeners_links             | Array  | Provides links to the previous or next page during pagination query, respectively. This parameter exists only in the response body of pagination query.                                                                                                                                                                                                                                                                   |
| tls_ciphers_policy          | String | Specifies the security policy used by the listener. This parameter is valid only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> .<br>The value can be <b>tls-1-0-inherit</b> , <b>tls-1-0</b> , <b>tls-1-1</b> , <b>tls-1-2</b> , or <b>tls-1-2-strict</b> , and the default value is <b>tls-1-0</b> . For details of cipher suites for each security policy, see <a href="#">Table 10-50</a> . |

**Table 10-49 loadbalancers** parameter description

| Parameter | Type   | Description                                       |
|-----------|--------|---------------------------------------------------|
| id        | String | Specifies the ID of the associated load balancer. |

**Table 10-50 tls\_ciphers\_policy** parameter description

| Security Policy | TLS Version                | Cipher Suite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-0-inherit | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA:DHE-DSS-AES128-SHA:CAMELLIA128-SHA:EDH-RSA-DES-CBC3-SHA:DES-CBC3-SHA:ECDHE-RSA-RC4-SHA:RC4-SHA:DHE-RSA-AES256-SHA:DHE-DSS-AES256-SHA:DHE-RSA-CAMELLIA256-SHA:DHE-DSS-CAMELLIA256-SHA:CAMELLIA256-SHA:EDH-DSS-DES-CBC3-SHA:DHE-RSA-CAMELLIA128-SHA:DHE-DSS-CAMELLIA128-SHA |
| tls-1-0         | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA                                                                                                                                                                                                                                                                                              |
| tls-1-1         | TLS 1.2 TLS 1.1            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tls-1-2         | TLS 1.2                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tls-1-2-strict  | TLS 1.2                    | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384                                                                                                                                                                                                                                                                                                                                                                                                            |

**Table 10-51** listeners\_links parameter description

| Parameter | Type   | Description                                                                                                                                                                                                                                                           |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| href      | String | Provides links to the previous or next page during pagination query, respectively.                                                                                                                                                                                    |
| rel       | String | Specifies the prompt of the previous or next page.<br>The value can be <b>next</b> or <b>previous</b> . The value <b>next</b> indicates the href containing the URL of the next page, and <b>previous</b> indicates the href containing the URL of the previous page. |

## Example Request

- Example request 1: Querying all listeners  
GET https://{Endpoint}/v2.0/lbaas/listeners?limit=2
- Request example 2: Querying UDP listeners  
GET https://{Endpoint}/v2.0/lbaas/listeners?protocol=UDP

## Example Response

- Example response 1

```
{
 "listeners": [
 {
 "client_ca_tls_container_ref": null,
 "protocol": "TCP",
 "description": "",
 "default_tls_container_ref": null,
 "admin_state_up": true,
 "http2_enable": false,
 "loadbalancers": [
 {
 "id": "bc7ba445-035a-4464-a1a3-a62cf4a14116"
 }
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "sni_container_refs": [],
 "connection_limit": -1,
 "protocol_port": 80,
 "default_pool_id": "ed75f16e-fcc6-403e-a3fb-4eae82005eab",
 "id": "75045172-70e9-480d-9443-b8b6459948f7",
 "tags": [],
 "name": "listener-cb2n",

 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14"
 },
 {
 "client_ca_tls_container_ref": null,
 "protocol": "TCP",
 "description": "",
 "default_tls_container_ref": null,
```

```
 "admin_state_up": true,
 "http2_enable": false,
 "loadbalancers": [
 {
 "id": "165b6a38-5278-4569-b747-b2ee65ea84a4"
 }
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "sni_container_refs": [],
 "connection_limit": -1,
 "protocol_port": 8080,
 "default_pool_id": null,
 "id": "dada0003-7b0e-4de8-a4e1-1e937be2ba14",
 "tags": [],
 "name": "lsnr_name_mod",
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14"
 },
 {
 "id": "e385-4e39-83de-4dde1f801ccb",
 "name": "listener-1",
 "protocol": "TCP",
 "protocol_port": 8080,
 "description": "Listener 1",
 "admin_state_up": true,
 "http2_enable": false,
 "loadbalancers": [
 {
 "id": "165b6a38-5278-4569-b747-b2ee65ea84a4"
 }
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "sni_container_refs": [],
 "connection_limit": -1,
 "protocol_port": 8080,
 "default_pool_id": null,
 "id": "e385-4e39-83de-4dde1f801ccb",
 "tags": [],
 "name": "listener-1",
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14"
 }
],
"listeners_links": [
 {
 "href": "https://{Endpoint}/v2.0/lbaas/listeners?limit=2&marker=042cc6a5-e385-4e39-83de-4dde1f801ccb",
 "rel": "next"
 },
 {
 "href": "https://{Endpoint}/v2.0/lbaas/listeners?limit=2&marker=025fcaa9-0159-4a0d-8583-d97fa77d9972&page_reverse=True",
 "rel": "previous"
 }
]
}
```

- Example response 2

```
{
 "listeners": [
 {
 "protocol_port": 64809,
 "protocol": "UDP",
 "description": "",
 "default_tls_container_ref": null,
 "sni_container_refs": [],
 "loadbalancers": [
 {
 "id": "c1127125-64a9-4394-a08a-ef3be8f7ef9c"
 }
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "created_at": "2018-11-29T13:56:21",
 "client_ca_tls_container_ref": null,
 "connection_limit": -1,
 "updated_at": "2018-11-29T13:56:22",
 "http2_enable": false,
 "admin_state_up": true,
 "default_pool_id": "2f6895be-019b-4c82-9b53-c4a2ac009e20",
 "id": "5c63d176-444f-4c75-9cfe-bcb8a05a845c",
 "tags": [],
 "name": "listener-tvp8"
 }
]
}
```



## Status Code

For details, see [Status Codes](#).

### 10.1.2.3 Querying Details of a Listener

#### Function

This API is used to query details about a listener using its ID.

#### URI

GET /v2.0/lbaas/listeners/{listener\_id}

**Table 10-52** Parameter description

| Parameter   | Mandatory | Type   | Description                |
|-------------|-----------|--------|----------------------------|
| listener_id | Yes       | String | Specifies the listener ID. |

#### Request

None

#### Response

**Table 10-53** Response parameters

| Parameter | Type   | Description                                                         |
|-----------|--------|---------------------------------------------------------------------|
| listener  | Object | Lists the listeners. For details, see <a href="#">Table 10-54</a> . |

**Table 10-54** listeners parameter description

| Parameter   | Type   | Description                                                                                                              |
|-------------|--------|--------------------------------------------------------------------------------------------------------------------------|
| id          | String | Specifies the listener ID.                                                                                               |
| tenant_id   | String | Specifies the ID of the project where the listener is used.                                                              |
| project_id  | String | Specifies the ID of the project to which the listener belongs. This parameter has the same meaning as <b>tenant_id</b> . |
| name        | String | Specifies the listener name.                                                                                             |
| description | String | Provides supplementary information about the listener.                                                                   |

| Parameter                   | Type    | Description                                                                                                                                                                                                                                                                                                           |
|-----------------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol                    | String  | Specifies the protocol used by the listener.<br>The value can be <b>TCP</b> , <b>HTTP</b> , <b>UDP</b> , or <b>TERMINATED_HTTPS</b> .                                                                                                                                                                                 |
| protocol_port               | Integer | Specifies the port used by the listener.<br>The port number ranges from 1 to 65535.                                                                                                                                                                                                                                   |
| loadbalancers               | Array   | Specifies the ID of the associated load balancer. For details, see <a href="#">Table 10-44</a> .                                                                                                                                                                                                                      |
| connection_limit            | Integer | Specifies the maximum number of connections.<br>The value ranges from <b>-1</b> to <b>2147483647</b> . The default value is <b>-1</b> , indicating that there is no restriction on the maximum number of connections.<br>This parameter is reserved.                                                                  |
| admin_state_up              | Boolean | Specifies the administrative status of the listener.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: The load balancer is enabled.</li><li>• <b>false</b>: The load balancer is disabled.</li></ul>                                |
| http2_enable                | Boolean | Specifies whether to use HTTP/2.<br>The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: HTTP/2 is used.</li><li>• <b>false</b>: HTTP/2 is not used.</li></ul> This parameter is valid only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> . |
| default_pool_id             | String  | Specifies the ID of the associated backend server group.<br>If a request does not match the forwarding policy, the request is forwarded to the default backend server group for processing. If the value is <b>null</b> , the listener has no default backend server group.                                           |
| default_tls_container_ref   | String  | Specifies the ID of the server certificate used by the listener. For details, see <a href="#">Certificate</a> .<br>This parameter is mandatory when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b> .                                                                                                               |
| client_ca_tls_container_ref | String  | Specifies the ID of the CA certificate used by the listener. For details, see <a href="#">Certificate</a> .                                                                                                                                                                                                           |

| Parameter          | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                   |
|--------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| sni_container_refs | Array  | Lists the IDs of SNI certificates (server certificates with domain names) used by the listener.<br><br>If the parameter value is an empty list, the SNI feature is disabled.                                                                                                                                                                                                                                                  |
| tags               | Array  | Tags the listener.                                                                                                                                                                                                                                                                                                                                                                                                            |
| created_at         | String | Specifies the time when the listener was created. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                       |
| updated_at         | String | Specifies the time when the listener was updated. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                       |
| tls_ciphers_policy | String | Specifies the security policy used by the listener. This parameter is valid only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> .<br><br>The value can be <b>tls-1-0-inherit</b> , <b>tls-1-0</b> , <b>tls-1-1</b> , <b>tls-1-2</b> , or <b>tls-1-2-strict</b> , and the default value is <b>tls-1-0</b> . For details of cipher suites for each security policy, see <a href="#">Table 10-41</a> . |

**Table 10-55 loadbalancers** parameter description

| Parameter | Type   | Description                                       |
|-----------|--------|---------------------------------------------------|
| id        | String | Specifies the ID of the associated load balancer. |

## Example Request

- Example request: Querying details of a listener  
GET https://{Endpoint}/v2.0/lbaas/listeners/09e64049-2ab0-4763-a8c5-f4207875dc3e

## Example Response

- Example response

```
{
 "listener": {
 "protocol_port": 8000,
 "protocol": "TCP",
 "description": "",
 "client_ca_tls_container_ref": null,
 "default_tls_container_ref": null,
 "admin_state_up": true,
 "http2_enable": false,
 "loadbalancers": [
 {
 "id": "3d77894d-2ffe-4411-ac0a-0d57689779b8"
 }
]
 }
}
```

```
 },
 "tenant_id": "1867112d054b427e808cc6096d8193a1",
 "project_id": "1867112d054b427e808cc6096d8193a1",
 "sni_container_refs": [],
 "connection_limit": -1,
 "default_pool_id": "b7e53dbd-62ab-4505-a280-5c066078a5c9",
 "id": "09e64049-2ab0-4763-a8c5-f4207875dc3e",
 "tags": [],
 "name": "listener-2",
 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14"
 }
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.2.4 Updating a Listener

## Function

This API is used to update a listener, such as listener name, description, associated backend server groups, and server certificates.

## Constraints

- If the provisioning status of the associated load balancer is not **ACTIVE**, the listener cannot be updated.
- Only users with the ELB administrator permissions can specify the value of **connection\_limit**.
- The **default\_pool\_id** parameter has the following constraints:
  - Its value cannot be the ID of any backend server group of other listeners.
  - Its value cannot be the ID of any backend server group associated with the forwarding policies set for other listeners.
- The relationships between the protocol used by the listener and the protocol of the backend server group are as follows:
  - When the protocol used by the listener is **TCP**, the protocol of the backend server group must be **TCP**.
  - When the protocol used by the listener is **UDP**, the protocol of the backend server group must be **UDP**.
  - When the protocol used by the listener is **HTTP** or **TERMINATED\_HTTPS**, the protocol of the backend server group must be **HTTP**.

## URI

PUT /v2.0/lbaas/listeners/{listener\_id}

**Table 10-56** Parameter description

| Parameter   | Mandatory | Type   | Description                |
|-------------|-----------|--------|----------------------------|
| listener_id | Yes       | String | Specifies the listener ID. |

## Request

**Table 10-57** Parameter description

| Parameter | Mandatory | Type   | Description                                                            |
|-----------|-----------|--------|------------------------------------------------------------------------|
| listener  | Yes       | Object | Specifies the listener. For details, see <a href="#">Table 10-58</a> . |

**Table 10-58** listener parameter description

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                       |
|------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name             | No        | String  | Specifies the listener name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                   |
| description      | No        | String  | Provides supplementary information about the listener.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                         |
| connection_limit | No        | Integer | Specifies the maximum number of connections.<br>The value ranges from -1 to <b>2147483647</b> .<br>This parameter is reserved. Only users with the ELB administrator permissions can specify this field.                                                                                                          |
| http2_enable     | No        | Boolean | Specifies whether to use HTTP/2.<br>The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li><b>true</b>: HTTP/2 is used.</li><li><b>false</b>: HTTP/2 is not used.</li></ul> This parameter is valid only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> . |

| Parameter                 | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| default_pool_id           | No        | String  | <p>Specifies the ID of the associated backend server group.</p> <p>If a request does not match the forwarding policy, the request is forwarded to the default backend server group for processing. If the value is <b>null</b>, the listener has no default backend server group.</p> <p>This parameter has the following constraints:</p> <ul style="list-style-type: none"><li>• Its value cannot be the ID of any backend server group of other listeners.</li><li>• Its value cannot be the ID of any backend server group associated with the forwarding policies set for other listeners.</li></ul> <p>The relationships between the protocol used by the listener and the protocol of the backend server group are as follows:</p> <ul style="list-style-type: none"><li>• When the protocol used by the listener is <b>TCP</b>, the protocol of the backend server group must be <b>TCP</b>.</li><li>• When the protocol used by the listener is <b>UDP</b>, the protocol of the backend server group must be <b>UDP</b>.</li><li>• When the protocol used by the listener is <b>HTTP</b> or <b>TERMINATED_HTTPS</b>, the protocol of the backend server group must be <b>HTTP</b>.</li></ul> |
| admin_state_up            | No        | Boolean | <p>Specifies the administrative status of the listener.</p> <p>This parameter is reserved, and the default value is <b>true</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| default_tls_container_ref | No        | String  | <p>Specifies the ID of the server certificate used by the listener.</p> <p>The value contains a maximum of 128 characters.</p> <p><b>NOTE</b><br/>This parameter is valid only when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

| Parameter                   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| client_ca_tls_container_ref | No        | String | <p>Specifies the ID of the CA certificate used by the listener.</p> <p>The value contains a maximum of 128 characters.</p> <p><b>NOTE</b><br/>This parameter is valid only when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b>.</p>                                                                                                                                                                                       |
| sni_container_refs          | No        | Array  | <p>Lists the IDs of SNI certificates (server certificates with domain names) used by the listener.</p> <p>If the parameter value is an empty list, the SNI feature is disabled.</p> <p><b>NOTE</b><br/>This parameter is valid only when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b>.</p>                                                                                                                              |
| tls_ciphers_policy          | No        | String | <p>Specifies the security policy used by the listener. This parameter is valid only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b>.</p> <p>The value can be <b>tls-1-0-inherit</b>, <b>tls-1-0</b>, <b>tls-1-1</b>, <b>tls-1-2</b>, or <b>tls-1-2-strict</b>, and the default value is <b>tls-1-0</b>. For details of cipher suites for each security policy, see <a href="#">Table 10-59</a>.</p> |

Table 10-59 `tls_ciphers_policy` parameter description

| Security Policy | TLS Version                | Cipher Suite                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------------|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tls-1-0-inherit | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:DHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA:DHE-DSS-AES128-SHA:CAMELLIA128-SHA:EDH-RSA-DES-CBC3-SHA:DES-CBC3-SHA:ECDHE-RSA-RC4-SHA:RC4-SHA:DHE-RSA-AES256-SHA:DHE-DSS-AES256-SHA:DHE-RSA-CAMELLIA256-SHA:DHE-DSS-CAMELLIA256-SHA:CAMELLIA256-SHA:EDH-DSS-DES-CBC3-SHA:DHE-RSA-CAMELLIA128-SHA:DHE-DSS-CAMELLIA128-SHA |
| tls-1-0         | TLS 1.2 TLS 1.1<br>TLS 1.0 | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA                                                                                                                                                                                                                                                                                              |
| tls-1-1         | TLS 1.2 TLS 1.1            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tls-1-2         | TLS 1.2                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| tls-1-2-strict  | TLS 1.2                    | ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-ECDSA-AES128-SHA256:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:ECDHE-ECDSA-AES256-SHA:AES128-SHA:AES256-SHA                                                                                                                                                                                                                                                                                              |

Response

Table 10-60 Response parameters

| Parameter | Type   | Description                                                            |
|-----------|--------|------------------------------------------------------------------------|
| listener  | Object | Specifies the listener. For details, see <a href="#">Table 10-61</a> . |



**Table 10-61** listeners parameter description

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                                              |
|------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id               | String  | Specifies the listener ID.                                                                                                                                                                                                                                                                                               |
| tenant_id        | String  | Specifies the ID of the project where the listener is used.                                                                                                                                                                                                                                                              |
| project_id       | String  | Specifies the ID of the project to which the listener belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                 |
| name             | String  | Specifies the listener name.                                                                                                                                                                                                                                                                                             |
| description      | String  | Provides supplementary information about the listener.                                                                                                                                                                                                                                                                   |
| protocol         | String  | Specifies the protocol used by the listener.<br>The value can be <b>TCP</b> , <b>HTTP</b> , <b>UDP</b> , or <b>TERMINATED_HTTPS</b> .                                                                                                                                                                                    |
| protocol_port    | Integer | Specifies the port used by the listener.<br>The port number ranges from 1 to 65535.                                                                                                                                                                                                                                      |
| loadbalancers    | Array   | Specifies the ID of the associated load balancer. For details, see <a href="#">Table 10-44</a> .                                                                                                                                                                                                                         |
| connection_limit | Integer | Specifies the maximum number of connections.<br><br>The value ranges from <b>-1</b> to <b>2147483647</b> . The default value is <b>-1</b> , indicating that there is no restriction on the maximum number of connections.<br><br>This parameter is reserved.                                                             |
| admin_state_up   | Boolean | Specifies the administrative status of the listener.<br><br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>● <b>true</b>: The load balancer is enabled.</li><li>● <b>false</b>: The load balancer is disabled.</li></ul>                               |
| http2_enable     | Boolean | Specifies whether to use HTTP/2.<br>The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>● <b>true</b>: HTTP/2 is used.</li><li>● <b>false</b>: HTTP/2 is not used.</li></ul><br>This parameter is valid only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> . |

| Parameter                   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                   |
|-----------------------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| default_pool_id             | String | Specifies the ID of the associated backend server group.<br><br>If a request does not match the forwarding policy, the request is forwarded to the default backend server group for processing. If the value is <b>null</b> , the listener has no default backend server group.                                                                                                                                               |
| default_tls_container_ref   | String | Specifies the ID of the server certificate used by the listener. For details, see <a href="#">Certificate</a> .<br><br>This parameter is mandatory when <b>protocol</b> is set to <b>TERMINATED_HTTPS</b> .                                                                                                                                                                                                                   |
| client_ca_tls_container_ref | String | Specifies the ID of the CA certificate used by the listener. For details, see <a href="#">Certificate</a> .                                                                                                                                                                                                                                                                                                                   |
| sni_container_refs          | Array  | Lists the IDs of SNI certificates (server certificates with domain names) used by the listener.<br><br>If the parameter value is an empty list, the SNI feature is disabled.                                                                                                                                                                                                                                                  |
| tags                        | Array  | Tags the listener.                                                                                                                                                                                                                                                                                                                                                                                                            |
| created_at                  | String | Specifies the time when the listener was created. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                       |
| updated_at                  | String | Specifies the time when the listener was updated. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                       |
| tls_ciphers_policy          | String | Specifies the security policy used by the listener. This parameter is valid only when the protocol used by the listener is set to <b>TERMINATED_HTTPS</b> .<br><br>The value can be <b>tls-1-0-inherit</b> , <b>tls-1-0</b> , <b>tls-1-1</b> , <b>tls-1-2</b> , or <b>tls-1-2-strict</b> , and the default value is <b>tls-1-0</b> . For details of cipher suites for each security policy, see <a href="#">Table 10-41</a> . |

**Table 10-62 loadbalancers** parameter description

| Parameter | Type   | Description                                       |
|-----------|--------|---------------------------------------------------|
| id        | String | Specifies the ID of the associated load balancer. |

## Example Request

- Example request: Updating a listener

PUT https://{Endpoint}/v2.0/lbaas/listeners/f622c150-72f5-4263-a47a-e5003c652aa3

```
{
 "listener": {
 "description": "my listener",
 "name": "listener-jy-test2",
 "default_pool_id": "c61310de-9a06-4f0c-850c-6f4797b9984c",
 "default_tls_container_ref": "23b58a961a4d4c95be585e98046e657a",
 "client_ca_tls_container_ref": "417a0976969f497db8cbb083bff343ba"
 }
}
```

## Example Response

- Example response

```
{
 "listener": {
 "client_ca_tls_container_ref": "417a0976969f497db8cbb083bff343ba",
 "protocol": "TERMINATED_HTTPS",
 "description": "my listener",
 "default_tls_container_ref": "23b58a961a4d4c95be585e98046e657a",
 "admin_state_up": true,
 "http2_enable": false,
 "loadbalancers": [
 {
 "id": "165b6a38-5278-4569-b747-b2ee65ea84a4"
 }
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "sni_container_refs": [],
 "connection_limit": -1,
 "protocol_port": 443,
 "tags": [],
 "default_pool_id": "c61310de-9a06-4f0c-850c-6f4797b9984c",
 "id": "f622c150-72f5-4263-a47a-e5003c652aa3",
 "name": "listener-jy-test2",

 "created_at": "2018-07-25T01:54:13",
 "updated_at": "2018-07-25T01:54:14"
 }
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.2.5 Deleting a Listener

#### Function

This API is used to delete a listener by ID.

#### Constraints

Before deleting the listener, delete the associated backend server groups by referring to [Deleting a Backend Server Group](#), or change the value of **default\_pool\_id** to **null** by referring to [Updating a Listener](#) and delete associated forwarding policies by referring to [Deleting a Forwarding Policy](#).

## URI

DELETE /v2.0/lbaas/listeners/{listener\_id}

**Table 10-63** Parameter description

| Parameter   | Mandatory | Type    | Description                                                                                                                                                                      |
|-------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listener_id | Yes       | String  | Specifies the listener ID.                                                                                                                                                       |
| cascade     | No        | Boolean | <b>[Discarded]</b> Specifies whether to delete the resources associated with the listener when the listener is deleted, including the backend server groups and backend servers. |

## Request

None

## Response

None

## Example Request

- Example request: Deleting a listener  
DELETE https://{Endpoint}/v2.0/lbaas/listeners/35cb8516-1173-4035-8dae-0dae3453f37f

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

# 10.1.3 Backend Server Group

## 10.1.3.1 Adding a Backend Server Group

## Function

This API is used to add a backend server group. After multiple backend servers are added to a backend server group, requests are distributed among backend servers based on the load balancing algorithm configured for the backend server group and the weight set for each backend server.

## Constraints

- If parameter **session-persistence** is configured, parameter **cookie\_name** is available only when the value of **type** is **APP\_COOKIE**.

## URI

POST /v2.0/lbaas/pools

## Request

**Table 10-64** Parameter description

| Parameter | Mandatory | Type   | Description                                                                        |
|-----------|-----------|--------|------------------------------------------------------------------------------------|
| pool      | Yes       | Object | Specifies the backend server group. For details, see <a href="#">Table 10-65</a> . |

**Table 10-65** pool parameter description

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                            |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id   | No        | String | Specifies the ID of the project where the backend server group is used.<br><br>The value must be the same as the value of <b>project_id</b> in the token.<br><br>The value contains a maximum of 255 characters.       |
| project_id  | No        | String | Specifies the ID of the project to which the backend server group belongs. This parameter has the same meaning as <b>tenant_id</b> .<br><br>The value must be the same as the value of <b>project_id</b> in the token. |
| name        | No        | String | Specifies the name of the backend server group.<br><br>The value contains a maximum of 255 characters.                                                                                                                 |
| description | No        | String | Provides supplementary information about the backend server group.<br><br>The value contains a maximum of 255 characters.                                                                                              |

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol       | Yes       | String  | <p>Specifies the protocol that the backend server group uses to receive requests.</p> <p>TCP, UDP, and HTTP are supported.</p> <p>When a backend server group is associated with a listener, the relationships between the protocol used by the listener and the protocol of the backend server group are as follows:</p> <ul style="list-style-type: none"><li>• When the protocol used by the listener is <b>UDP</b>, the protocol of the backend server group must be <b>UDP</b>.</li><li>• When the protocol used by the listener is <b>TCP</b>, the protocol of the backend server group must be <b>TCP</b>.</li><li>• When the protocol used by the listener is <b>HTTP</b> or <b>TERMINATED_HTTPS</b>, the protocol of the backend server group must be <b>HTTP</b>.</li></ul> |
| lb_algorithm   | Yes       | String  | <p>Specifies the load balancing algorithm of the backend server group.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN</b>: indicates the weighted round robin algorithm.</li><li>• <b>LEAST_CONNECTIONS</b>: indicates the weighted least connections algorithm.</li><li>• <b>SOURCE_IP</b>: indicates the source IP hash algorithm.</li></ul> <p>When the value is <b>SOURCE_IP</b>, the weights of backend servers in the server group are invalid.</p>                                                                                                                                                                                                                                                                   |
| admin_state_up | No        | Boolean | <p>Specifies the administrative status of the backend server group.</p> <p>This parameter is reserved, and the default value is <b>true</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Parameter           | Mandatory | Type   | Description                                                                                                                                                                       |
|---------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listener_id         | No        | String | Specifies the ID of the listener associated with the backend server group.<br>Specify either <b>listener_id</b> or <b>loadbalancer_id</b> , or both of them.                      |
| loadbalancer_id     | No        | String | Specifies the ID of the load balancer associated with the backend server group.<br>Specify either <b>listener_id</b> or <b>loadbalancer_id</b> , or both of them.                 |
| session_persistence | No        | Object | Specifies the sticky session timeout duration in minutes. For details, see <a href="#">Table 10-66</a> .<br>If the value is <b>null</b> , the sticky session feature is disabled. |

**Table 10-66 session\_persistence** parameter description

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type        | Yes       | String | <p>Specifies the sticky session type.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>SOURCE_IP</b>: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.</li><li>• <b>HTTP_COOKIE</b>: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.</li><li>• <b>APP_COOKIE</b>: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server.</li></ul> <p>When the protocol of the backend server group is TCP, only <b>SOURCE_IP</b> takes effect. When the protocol of the backend server group is HTTP, only <b>HTTP_COOKIE</b> or <b>APP_COOKIE</b> takes effect.</p> |
| cookie_name | No        | String | <p>Specifies the cookie name.</p> <p>This parameter is mandatory when the sticky session type is <b>APP_COOKIE</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |



| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|---------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| persistence_timeout | No        | Integer | <p>Specifies the sticky session timeout duration in minutes.</p> <p>This parameter is invalid when <b>type</b> is set to <b>APP_COOKIE</b>.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none"><li>• When the protocol of the backend server group is TCP or UDP, the value ranges from <b>1</b> to <b>60</b>.</li><li>• When the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>.</li></ul> |

## Response

**Table 10-67** Response parameters

| Parameter | Type   | Description                                                                        |
|-----------|--------|------------------------------------------------------------------------------------|
| pool      | Object | Specifies the backend server group. For details, see <a href="#">Table 10-68</a> . |

**Table 10-68** pools parameter description

| Parameter  | Type   | Description                                                                                                                                |
|------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------|
| id         | String | Specifies the ID of the backend server group.                                                                                              |
| tenant_id  | String | <p>Specifies the ID of the project where the backend server group is used.</p> <p>The value contains a maximum of 255 characters.</p>      |
| project_id | String | <p>Specifies the ID of the project to which the backend server group belongs. This parameter has the same meaning as <b>tenant_id</b>.</p> |
| name       | String | <p>Specifies the name of the backend server group.</p> <p>The value contains a maximum of 255 characters.</p>                              |

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description      | String  | Provides supplementary information about the backend server group.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| protocol         | String  | Specifies the protocol that the backend server group uses to receive requests.<br>TCP, UDP, and HTTP are supported.<br>When a backend server group is associated with a listener, the relationships between the protocol used by the listener and the protocol of the backend server group are as follows: <ul style="list-style-type: none"><li>• When the protocol used by the listener is <b>UDP</b>, the protocol of the backend server group must be <b>UDP</b>.</li><li>• When the protocol used by the listener is <b>TCP</b>, the protocol of the backend server group must be <b>TCP</b>.</li><li>• When the protocol used by the listener is <b>HTTP</b> or <b>TERMINATED_HTTPS</b>, the protocol of the backend server group must be <b>HTTP</b>.</li></ul> |
| lb_algorithm     | String  | Specifies the load balancing algorithm of the backend server group.<br>The value can be one of the following: <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN</b>: indicates the weighted round robin algorithm.</li><li>• <b>LEAST_CONNECTIONS</b>: indicates the weighted least connections algorithm.</li><li>• <b>SOURCE_IP</b>: indicates the source IP hash algorithm. When the value is <b>SOURCE_IP</b>, the weights of backend servers in the server group are invalid.</li></ul>                                                                                                                                                                                                                                                                      |
| members          | Array   | Lists the IDs of backend servers in the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| healthmonitor_id | String  | Specifies the ID of the health check configured for the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| admin_state_up   | Boolean | Specifies the administrative status of the backend server group.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

| Parameter           | Type   | Description                                                                                                                                                                                                                                                                                         |
|---------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| listeners           | Array  | Lists the IDs of listeners associated with the backend server group.                                                                                                                                                                                                                                |
| loadbalancers       | Array  | Lists the IDs of load balancers associated with the backend server group.                                                                                                                                                                                                                           |
| session_persistence | Object | <p>Specifies whether to enable sticky sessions. For details, see <a href="#">Table 10-72</a>.</p> <p>Once sticky session are enabled, requests from the same client are sent to the same backend server during the session.</p> <p>When sticky sessions are disabled, the value is <b>null</b>.</p> |

**Table 10-69 members** parameter description

| Parameter | Type   | Description                                        |
|-----------|--------|----------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server. |

**Table 10-70 listeners** parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

**Table 10-71 loadbalancers** parameter description

| Parameter | Type   | Description                                       |
|-----------|--------|---------------------------------------------------|
| id        | String | Specifies the ID of the associated load balancer. |

**Table 10-72 session\_persistence** parameter description

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type        | String | <p>Specifies the sticky session type.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>SOURCE_IP</b>: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.</li><li>• <b>HTTP_COOKIE</b>: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.</li><li>• <b>APP_COOKIE</b>: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server.</li></ul> <p>When the protocol of the backend server group is TCP, only <b>SOURCE_IP</b> takes effect. When the protocol of the backend server group is HTTP, only <b>HTTP_COOKIE</b> or <b>APP_COOKIE</b> takes effect.</p> |
| cookie_name | String | <p>Specifies the cookie name.</p> <p>This parameter is mandatory when the sticky session type is <b>APP_COOKIE</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| persistence_timeout | Integer | <p>Specifies the sticky session timeout duration in minutes.</p> <p>This parameter is invalid when <b>type</b> is set to <b>APP_COOKIE</b>.</p> <ul style="list-style-type: none"><li>Optional value ranges are as follows:<ul style="list-style-type: none"><li>When the protocol of the backend server group is TCP or UDP, the value ranges from <b>1</b> to <b>60</b>.</li><li>When the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>.</li></ul></li></ul> |

## Example Request

- Example request 1: Adding a backend server group with the sticky session feature disabled

POST https://{Endpoint}/v2.0/lbaas/pools

```
{
 "pool": {
 "lb_algorithm": "ROUND_ROBIN",
 "loadbalancer_id": "63ad9dfe-4750-479f-9630-ada43ccc8117",
 "protocol": "HTTP"
 }
}
```

- Example request 2: Adding an HTTP backend server group with the value of **type** set to **APP\_COOKIE**

POST https://{Endpoint}/v2.0/lbaas/pools

```
{
 "pool": {
 "lb_algorithm": "ROUND_ROBIN",
 "listener_id": "370fb112-e920-486a-b051-1d0d30704dd3",
 "protocol": "HTTP",
 "session_persistence": {
 "cookie_name": "my_cookie",
 "type": "APP_COOKIE",
 "persistence_timeout": 1
 },
 "admin_state_up": true
 }
}
```

- Example request 3: Adding an HTTP backend server group with the value of **type** set to **HTTP\_COOKIE**

POST https://{Endpoint}/v2.0/lbaas/pools

```
{
 "pool": {
 "lb_algorithm": "ROUND_ROBIN",
 "loadbalancer_id": "63ad9dfe-4750-479f-9630-ada43ccc8117",
 "protocol": "HTTP",
 "session_persistence": {
```

```
 "type": "HTTP_COOKIE"
 }
 }
 }
```

## Example Response

- Example response 1

```
{
 "pool": {
 "lb_algorithm": "ROUND_ROBIN",
 "protocol": "HTTP",
 "description": "",
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "63ad9dfe-4750-479f-9630-ada43ccc8117"
 }
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "session_persistence": null,
 "healthmonitor_id": null,
 "listeners": [],
 "members": [],
 "id": "4e496951-befb-47bf-9573-c1cd11825c07",
 "name": ""
 }
}
```

- Example response 2

```
{
 "pool": {
 "lb_algorithm": "ROUND_ROBIN",
 "protocol": "HTTP",
 "description": "",
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "6b041b9e-976b-40ba-b075-375be6110b53"
 }
],
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "session_persistence": {
 "cookie_name": "my_cookie",
 "type": "APP_COOKIE",
 "persistence_timeout": 1
 },
 "healthmonitor_id": null,
 "listeners": [
 {
 "id": "370fb112-e920-486a-b051-1d0d30704dd3"
 }
],
 "members": [
 {
 "id": "307f8968-9474-4d0c-8434-66be09dabcc1",
 "name": ""
 }
]
 }
}
```

- Example response 3

```
{
 "pool": {
 "lb_algorithm": "ROUND_ROBIN",
 "protocol": "HTTP",
 "description": "",
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "63ad9dfe-4750-479f-9630-ada43ccc8117"
 }
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "session_persistence": null,
 "healthmonitor_id": null,
 "listeners": [],
 "members": [],
 "id": "4e496951-befb-47bf-9573-c1cd11825c07",
 "name": ""
 }
}
```

```
"admin_state_up": true,
"loadbalancers": [
 {
 "id": "63ad9dfe-4750-479f-9630-ada43ccc8117"
 }
],
"tenant_id": "601240b9c5c94059b63d484c92cfe308",
"project_id": "601240b9c5c94059b63d484c92cfe308",
"session_persistence": {
 "persistence_timeout": 1440,
 "cookie_name": null,
 "type": "HTTP_COOKIE"
},
"healthmonitor_id": null,
"listeners": [],
"members": [],
"id": "d46eab56-d76b-4cd3-8952-3c3c4cf113aa",
"name": ""
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.3.2 Querying Backend Server Groups

#### Function

This API is used to query the backend server groups and display them in a list. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

#### Constraints

Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query. Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

#### URI

GET /v2.0/lbaas/pools

## Request

**Table 10-73** Parameter description

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker       | No        | String  | Specifies the ID of the backend server group from which pagination query starts, that is, the ID of the last backend server group on the previous page. If this parameter is not specified, the first page will be queried.<br><br>This parameter must be used together with <b>limit</b> .                                                                                                                                       |
| limit        | No        | Integer | Specifies the number of backend server groups on each page.                                                                                                                                                                                                                                                                                                                                                                       |
| page_reverse | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br><br>This parameter must be used together with <b>limit</b> . |
| id           | No        | String  | Specifies the ID of the backend server group.                                                                                                                                                                                                                                                                                                                                                                                     |
| tenant_id    | No        | String  | Specifies the ID of the project where the backend server group is used.<br><br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                    |
| project_id   | No        | String  | Specifies the ID of the project to which the backend server group belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                              |
| name         | No        | String  | Specifies the name of the backend server group.<br><br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                            |



| Parameter        | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|------------------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description      | No        | String | Provides supplementary information about the backend server group.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| healthmonitor_id | No        | String | Specifies the ID of the health check configured for the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| loadbalancer_id  | No        | String | Specifies the ID of the load balancer associated with the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| protocol         | No        | String | Specifies the protocol that the backend server group uses to receive requests.<br>TCP, UDP, and HTTP are supported.                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| lb_algorithm     | No        | String | Specifies the load balancing algorithm of the backend server group.<br>The value can be one of the following: <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN</b>: indicates the weighted round robin algorithm.</li><li>• <b>LEAST_CONNECTIONS</b>: indicates the weighted least connections algorithm.</li><li>• <b>SOURCE_IP</b>: indicates the source IP hash algorithm.</li></ul> When the value is <b>SOURCE_IP</b> , the weights of backend servers in the server group are invalid. For details about parameter <b>weight</b> , see <a href="#">Table 10-110</a> . |
| member_address   | No        | String | Lists the IDs of backend servers in the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| member_device_id | No        | String | Specifies the ID of the cloud server used as the backend server in the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## Response

**Table 10-74** Response parameters

| Parameter   | Type  | Description                                                                                                                                                                                               |
|-------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pools       | Array | Specifies the backend server group. For details, see <a href="#">Table 10-75</a> .                                                                                                                        |
| pools_links | List  | Provides links to the previous or next page during pagination query, respectively.<br>This parameter exists only in the response body of pagination query. For details, see <a href="#">Table 10-80</a> . |

**Table 10-75** pools parameter description

| Parameter   | Type   | Description                                                                                                                          |
|-------------|--------|--------------------------------------------------------------------------------------------------------------------------------------|
| id          | String | Specifies the ID of the backend server group.                                                                                        |
| tenant_id   | String | Specifies the ID of the project where the backend server group is used.<br>The value contains a maximum of 255 characters.           |
| project_id  | String | Specifies the ID of the project to which the backend server group belongs. This parameter has the same meaning as <b>tenant_id</b> . |
| name        | String | Specifies the name of the backend server group.<br>The value contains a maximum of 255 characters.                                   |
| description | String | Provides supplementary information about the backend server group.<br>The value contains a maximum of 255 characters.                |
| protocol    | String | Specifies the protocol that the backend server group uses to receive requests.<br>TCP, UDP, and HTTP are supported.                  |

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|---------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| lb_algorithm        | String  | <p>Specifies the load balancing algorithm of the backend server group.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN</b>: indicates the weighted round robin algorithm.</li><li>• <b>LEAST_CONNECTIONS</b>: indicates the weighted least connections algorithm.</li><li>• <b>SOURCE_IP</b>: indicates the source IP hash algorithm.</li></ul> <p>When the value is <b>SOURCE_IP</b>, the weights of backend servers in the server group are invalid.</p> |
| members             | Array   | <p>Lists the IDs of backend servers in the backend server group.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| healthmonitor_id    | String  | <p>Specifies the ID of the health check configured for the backend server group.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                |
| admin_state_up      | Boolean | <p>Specifies the administrative status of the backend server group.</p> <p>This parameter is reserved. The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                                                                    |
| listeners           | Array   | <p>Lists the IDs of listeners associated with the backend server group.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| loadbalancers       | String  | <p>Lists the IDs of load balancers associated with the backend server group.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| session_persistence | Object  | <p>Specifies whether to enable the sticky session feature. For details, see <a href="#">Table 10-79</a>.</p> <p>Once sticky session are enabled, requests from the same client are sent to the same backend server during the session.</p> <p>When sticky sessions are disabled, the value is <b>null</b>.</p>                                                                                                                                                                                                      |

**Table 10-76** members parameter description

| Parameter | Type   | Description                                               |
|-----------|--------|-----------------------------------------------------------|
| id        | String | <p>Specifies the ID of the associated backend server.</p> |

**Table 10-77 listeners** parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

**Table 10-78 loadbalancers** parameter description

| Parameter | Type   | Description                                       |
|-----------|--------|---------------------------------------------------|
| id        | String | Specifies the ID of the associated load balancer. |

**Table 10-79 session\_persistence** parameter description

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type      | String | <p>Specifies the sticky session type.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>SOURCE_IP</b>: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.</li><li>• <b>HTTP_COOKIE</b>: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.</li><li>• <b>APP_COOKIE</b>: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server.</li></ul> <p>When the protocol of the backend server group is TCP, only <b>SOURCE_IP</b> takes effect. When the protocol of the backend server group is HTTP, only <b>HTTP_COOKIE</b> or <b>APP_COOKIE</b> takes effect.</p> |

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cookie_name         | String  | Specifies the cookie name.<br>This parameter is mandatory when the sticky session type is <b>APP_COOKIE</b> .                                                                                                                                                                                                                                                                                                                                                                                               |
| persistence_timeout | Integer | Specifies the sticky session timeout duration in minutes.<br>This parameter is invalid when <b>type</b> is set to <b>APP_COOKIE</b> . <ul style="list-style-type: none"><li>Optional value ranges are as follows:<ul style="list-style-type: none"><li>When the protocol of the backend server group is TCP or UDP, the value ranges from <b>1</b> to <b>60</b>.</li><li>When the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>.</li></ul></li></ul> |

**Table 10-80** pools\_links parameter description

| Parameter | Type   | Description                                                                                                                                                                                                                                                            |
|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| href      | String | Provides links to the previous or next page during pagination query, respectively.                                                                                                                                                                                     |
| rel       | String | Specifies the prompt of the previous or next page. The value can be <b>next</b> or <b>previous</b> . <ul style="list-style-type: none"><li><b>next</b>: indicates the URL of the next page.</li><li><b>previous</b>: indicates the URL of the previous page.</li></ul> |

## Example Request

- Example request 1: Querying backend server groups by pages  
GET https://{Endpoint}/v2.0/lbaas/pools?limit=2
- Example request 2: Querying backend server groups whose load balancing algorithm is **SOURCE\_IP**  
GET https://{Endpoint}/v2.0/lbaas/pools?lb\_algorithm=SOURCE\_IP

## Example Response

- Example response 1

```
{
 "pools": [
 {
 "lb_algorithm": "SOURCE_IP",
 "protocol": "TCP",
 "description": "",
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "07d28d4a-4899-40a3-a939-5d09d69019e1"
 }
],
 "tenant_id": "1867112d054b427e808cc6096d8193a1",
 "project_id": "1867112d054b427e808cc6096d8193a1",
 "session_persistence": null,
 "healthmonitor_id": null,
 "listeners": [
 {
 "id": "1b421c2d-7e78-4a78-9ee4-c8ccba41f15b"
 }
],
 "members": [
 {
 "id": "88f9c079-29cb-435a-b98f-0c5c0b90c2bd"
 },
 {
 "id": "2f4c9644-d5d2-4cf8-a3c0-944239a4f58c"
 }
],
 "id": "3a9f50bb-f041-4eac-a117-82472d8a0007",
 "name": "my-pool"
 }
],
 "pools_links": [
 {
 "href": "https://{Endpoint}/v2.0/lbaas/pools?limit=2&marker=0469a5ad-6233-4669-8d38-5920f2bd95b6",
 "rel": "next"
 },
 {
 "href": "https://{Endpoint}/v2.0/lbaas/pools?limit=2&marker=02d43e35-e874-4139-bdba-d65609db20ab&page_reverse=True",
 "rel": "previous"
 }
]
}
```

- Example response 2

```
{
 "pools": [
 {
 "lb_algorithm": "SOURCE_IP",
 "protocol": "TCP",
 "description": "",
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "07d28d4a-4899-40a3-a939-5d09d69019e1"
 }
],
 "tenant_id": "1867112d054b427e808cc6096d8193a1",
 "project_id": "1867112d054b427e808cc6096d8193a1",
 "session_persistence": null,
 "healthmonitor_id": null,
 "listeners": [
 {
 "id": "1b421c2d-7e78-4a78-9ee4-c8ccba41f15b"
 }
]
 }
]
}
```

```
 },
 "members": [
 {
 "id": "88f9c079-29cb-435a-b98f-0c5c0b90c2bd"
 },
 {
 "id": "2f4c9644-d5d2-4cf8-a3c0-944239a4f58c"
 }
],
 "id": "3a9f50bb-f041-4eac-a117-82472d8a0007",
 "name": "my-pool"
 }
]
```

Status Code

For details, see [Status Codes](#).

10.1.3.3 Querying Details of a Backend Server Group

Function

This API is used to query details about a backend server group using its ID.

URI

GET /v2.0/lbaas/pools/{pool\_id}

Table 10-81 Parameter description

| Parameter | Mandator<br>y | Type   | Description                                   |
|-----------|---------------|--------|-----------------------------------------------|
| pool_id   | Yes           | String | Specifies the ID of the backend server group. |

Request

None

Response

Table 10-82 Response parameters

| Parameter | Type   | Description                                                                        |
|-----------|--------|------------------------------------------------------------------------------------|
| pool      | Object | Specifies the backend server group. For details, see <a href="#">Table 10-83</a> . |

**Table 10-83** pools parameter description

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id          | String | Specifies the ID of the backend server group.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| tenant_id   | String | Specifies the ID of the project where the backend server group is used.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| project_id  | String | Specifies the ID of the project to which the backend server group belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| name        | String | Specifies the name of the backend server group.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| description | String | Provides supplementary information about the backend server group.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| protocol    | String | Specifies the protocol that the backend server group uses to receive requests.<br>TCP, UDP, and HTTP are supported.<br>When a backend server group is associated with a listener, the relationships between the protocol used by the listener and the protocol of the backend server group are as follows: <ul style="list-style-type: none"><li>• When the protocol used by the listener is <b>UDP</b>, the protocol of the backend server group must be <b>UDP</b>.</li><li>• When the protocol used by the listener is <b>TCP</b>, the protocol of the backend server group must be <b>TCP</b>.</li><li>• When the protocol used by the listener is <b>HTTP</b> or <b>TERMINATED_HTTPS</b>, the protocol of the backend server group must be <b>HTTP</b>.</li></ul> |



| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| lb_algorithm        | String  | <p>Specifies the load balancing algorithm of the backend server group.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN</b>: indicates the weighted round robin algorithm.</li><li>• <b>LEAST_CONNECTIONS</b>: indicates the weighted least connections algorithm.</li><li>• <b>SOURCE_IP</b>: indicates the source IP hash algorithm. When the value is <b>SOURCE_IP</b>, the weights of backend servers in the server group are invalid.</li></ul> |
| members             | Array   | <p>Lists the IDs of backend servers in the backend server group.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| healthmonitor_id    | String  | <p>Specifies the ID of the health check configured for the backend server group.</p>                                                                                                                                                                                                                                                                                                                                                                                                                         |
| admin_state_up      | Boolean | <p>Specifies the administrative status of the backend server group.</p> <p>This parameter is reserved. The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                                                             |
| listeners           | Array   | <p>Lists the IDs of listeners associated with the backend server group.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| loadbalancers       | Array   | <p>Lists the IDs of load balancers associated with the backend server group.</p>                                                                                                                                                                                                                                                                                                                                                                                                                             |
| session_persistence | Object  | <p>Specifies whether to enable sticky sessions. For details, see <a href="#">Table 10-72</a>.</p> <p>Once sticky session are enabled, requests from the same client are sent to the same backend server during the session.</p> <p>When sticky sessions are disabled, the value is <b>null</b>.</p>                                                                                                                                                                                                          |

**Table 10-84** members parameter description

| Parameter | Type   | Description                                               |
|-----------|--------|-----------------------------------------------------------|
| id        | String | <p>Specifies the ID of the associated backend server.</p> |

**Table 10-85 listeners** parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

**Table 10-86 loadbalancers** parameter description

| Parameter | Type   | Description                                       |
|-----------|--------|---------------------------------------------------|
| id        | String | Specifies the ID of the associated load balancer. |

**Table 10-87 session\_persistence** parameter description

| Parameter | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type      | String | <p>Specifies the sticky session type.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>SOURCE_IP</b>: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.</li><li>• <b>HTTP_COOKIE</b>: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.</li><li>• <b>APP_COOKIE</b>: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server.</li></ul> <p>When the protocol of the backend server group is TCP, only <b>SOURCE_IP</b> takes effect. When the protocol of the backend server group is HTTP, only <b>HTTP_COOKIE</b> or <b>APP_COOKIE</b> takes effect.</p> |

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| cookie_name         | String  | Specifies the cookie name.<br>This parameter is mandatory when the sticky session type is <b>APP_COOKIE</b> .                                                                                                                                                                                                                                                                                                                                                                                               |
| persistence_timeout | Integer | Specifies the sticky session timeout duration in minutes.<br>This parameter is invalid when <b>type</b> is set to <b>APP_COOKIE</b> . <ul style="list-style-type: none"><li>Optional value ranges are as follows:<ul style="list-style-type: none"><li>When the protocol of the backend server group is TCP or UDP, the value ranges from <b>1</b> to <b>60</b>.</li><li>When the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>.</li></ul></li></ul> |

## Example Request

- Example request: Querying details of a backend server group  
GET https://{Endpoint}/v2.0/lbaas/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332

## Example Response

- Example response

```
{
 "pool": {
 "lb_algorithm": "SOURCE_IP",
 "protocol": "TCP",
 "description": "",
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "6f52004c-3fe9-4c09-b8ce-ed9d9c74a3b1"
 }
],
 "tenant_id": "1867112d054b427e808cc6096d8193a1",
 "project_id": "1867112d054b427e808cc6096d8193a1",
 "session_persistence": null,
 "healthmonitor_id": null,
 "listeners": [
 {
 "id": "6e29b2cd-4e53-40f6-ae7b-29e918de67f2"
 }
],
 "members": [],
 "id": "5a9a3e9e-d1aa-448e-af37-a70171f2a332",
 "name": "my-pool"
 }
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.3.4 Updating a Backend Server Group

## Function

This API is used to update a backend server group.

## Constraints

If the provisioning status of the load balancer associated with a backend server group is not **ACTIVE**, the backend server group cannot be updated.

## URI

PUT /v2.0/lbaas/pools/{pool\_id}

**Table 10-88** Parameter description

| Parameter | Mandatory | Type   | Description                                   |
|-----------|-----------|--------|-----------------------------------------------|
| pool_id   | Yes       | String | Specifies the ID of the backend server group. |

## Request

**Table 10-89** Parameter description

| Parameter | Mandatory | Type   | Description                                                                        |
|-----------|-----------|--------|------------------------------------------------------------------------------------|
| pool      | Yes       | Object | Specifies the backend server group. For details, see <a href="#">Table 10-90</a> . |

**Table 10-90** pool parameter description

| Parameter | Mandatory | Type   | Description                                                                                        |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------|
| name      | No        | String | Specifies the name of the backend server group.<br>The value contains a maximum of 255 characters. |

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|---------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description         | No        | String  | Provides supplementary information about the backend server group.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                      |
| lb_algorithm        | No        | String  | Specifies the load balancing algorithm of the backend server group.<br>Value options: <ul style="list-style-type: none"><li>● <b>ROUND_ROBIN</b>: indicates the weighted round robin algorithm.</li><li>● <b>LEAST_CONNECTIONS</b>: indicates the weighted least connections algorithm.</li><li>● <b>SOURCE_IP</b>: indicates the source IP hash algorithm.</li></ul> When the value is <b>SOURCE_IP</b> , the weights of backend servers in the server group are invalid. |
| admin_state_up      | No        | Boolean | Specifies the administrative status of the backend server group.<br>This parameter is reserved, and the default value is <b>true</b> .                                                                                                                                                                                                                                                                                                                                     |
| session_persistence | No        | Object  | Specifies whether to enable the sticky session feature. For details, see <a href="#">Table 10-97</a> .<br>Once sticky session are enabled, requests from the same client are sent to the same backend server during the session.<br>When sticky sessions are disabled, the value is <b>null</b> .                                                                                                                                                                          |

**Table 10-91 session\_persistence** parameter description

| Parameter           | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|---------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type                | No        | String  | <p>Specifies the sticky session type.</p> <p>Value options:</p> <ul style="list-style-type: none"><li>• <b>SOURCE_IP</b>: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.</li><li>• <b>HTTP_COOKIE</b>: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.</li><li>• <b>APP_COOKIE</b>: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server.</li><li>• When the protocol of the backend server group is TCP, only <b>SOURCE_IP</b> takes effect. When the protocol of the backend server group is HTTP, only <b>HTTP_COOKIE</b> or <b>APP_COOKIE</b> takes effect.</li></ul> |
| cookie_name         | No        | String  | <p>Specifies the cookie name.</p> <p>This parameter is mandatory and can be specified when the sticky session type is <b>APP_COOKIE</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| persistence_timeout | No        | Integer | <p>Specifies the sticky session timeout duration in minutes.</p> <p>This parameter is invalid when <b>type</b> is set to <b>APP_COOKIE</b>.</p> <p>Value range options are as follows:</p> <ul style="list-style-type: none"><li>• When the protocol of the backend server group is TCP or UDP, the value ranges from <b>1</b> to <b>60</b>.</li><li>• When the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

## Response

**Table 10-92** Parameter description

| Parameter | Type   | Description                                                                        |
|-----------|--------|------------------------------------------------------------------------------------|
| pool      | Object | Specifies the backend server group. For details, see <a href="#">Table 10-93</a> . |

**Table 10-93** pools parameter description

| Parameter   | Type   | Description                                                                                                                          |
|-------------|--------|--------------------------------------------------------------------------------------------------------------------------------------|
| id          | String | Specifies the ID of the backend server group.                                                                                        |
| tenant_id   | String | Specifies the ID of the project where the backend server group is used.<br>The value contains a maximum of 255 characters.           |
| project_id  | String | Specifies the ID of the project to which the backend server group belongs. This parameter has the same meaning as <b>tenant_id</b> . |
| name        | String | Specifies the name of the backend server group.<br>The value contains a maximum of 255 characters.                                   |
| description | String | Provides supplementary information about the backend server group.<br>The value contains a maximum of 255 characters.                |

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| protocol         | String  | <p>Specifies the protocol that the backend server group uses to receive requests. TCP, UDP, and HTTP are supported.</p> <p>When a backend server group is associated with a listener, the relationships between the protocol used by the listener and the protocol of the backend server group are as follows:</p> <ul style="list-style-type: none"><li>• When the protocol used by the listener is <b>UDP</b>, the protocol of the backend server group must be <b>UDP</b>.</li><li>• When the protocol used by the listener is <b>TCP</b>, the protocol of the backend server group must be <b>TCP</b>.</li><li>• When the protocol used by the listener is <b>HTTP</b> or <b>TERMINATED_HTTPS</b>, the protocol of the backend server group must be <b>HTTP</b>.</li></ul> |
| lb_algorithm     | String  | <p>Specifies the load balancing algorithm of the backend server group.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>ROUND_ROBIN</b>: indicates the weighted round robin algorithm.</li><li>• <b>LEAST_CONNECTIONS</b>: indicates the weighted least connections algorithm.</li><li>• <b>SOURCE_IP</b>: indicates the source IP hash algorithm. When the value is <b>SOURCE_IP</b>, the weights of backend servers in the server group are invalid.</li></ul>                                                                                                                                                                                                                                                                   |
| members          | Array   | <p>Lists the IDs of backend servers in the backend server group.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| healthmonitor_id | String  | <p>Specifies the ID of the health check configured for the backend server group.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| admin_state_up   | Boolean | <p>Specifies the administrative status of the backend server group.</p> <p>This parameter is reserved. The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| listeners        | Array   | <p>Lists the IDs of listeners associated with the backend server group.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |



| Parameter           | Type   | Description                                                                                                                                                                                                                                                                                         |
|---------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| loadbalancers       | Array  | Lists the IDs of load balancers associated with the backend server group.                                                                                                                                                                                                                           |
| session_persistence | Object | <p>Specifies whether to enable sticky sessions. For details, see <a href="#">Table 10-72</a>.</p> <p>Once sticky session are enabled, requests from the same client are sent to the same backend server during the session.</p> <p>When sticky sessions are disabled, the value is <b>null</b>.</p> |

**Table 10-94 members** parameter description

| Parameter | Type   | Description                                        |
|-----------|--------|----------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server. |

**Table 10-95 listeners** parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

**Table 10-96 loadbalancers** parameter description

| Parameter | Type   | Description                                       |
|-----------|--------|---------------------------------------------------|
| id        | String | Specifies the ID of the associated load balancer. |

**Table 10-97 session\_persistence** parameter description

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type        | String | <p>Specifies the sticky session type.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>SOURCE_IP</b>: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.</li><li>• <b>HTTP_COOKIE</b>: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.</li><li>• <b>APP_COOKIE</b>: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server.</li></ul> <p>When the protocol of the backend server group is TCP, only <b>SOURCE_IP</b> takes effect. When the protocol of the backend server group is HTTP, only <b>HTTP_COOKIE</b> or <b>APP_COOKIE</b> takes effect.</p> |
| cookie_name | String | <p>Specifies the cookie name.</p> <p>This parameter is mandatory when the sticky session type is <b>APP_COOKIE</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

| Parameter           | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| persistence_timeout | Integer | <p>Specifies the sticky session timeout duration in minutes.</p> <p>This parameter is invalid when <b>type</b> is set to <b>APP_COOKIE</b>.</p> <ul style="list-style-type: none"><li>Optional value ranges are as follows:<ul style="list-style-type: none"><li>When the protocol of the backend server group is TCP or UDP, the value ranges from <b>1</b> to <b>60</b>.</li><li>When the protocol of the backend server group is HTTP or HTTPS, the value ranges from <b>1</b> to <b>1440</b>.</li></ul></li></ul> |

## Example Request

- Example request 1: Updating a backend server group

PUT https://{Endpoint}/v2.0/lbaas/pools/12ff63af-4127-4074-a251-bcb2ecc53ebe

```
{
 "pool": {
 "name": "pool2",
 "description": "pool two",
 "lb_algorithm": "LEAST_CONNECTIONS"
 }
}
```

- Example request 2: Disabling the sticky session feature of a backend server group

PUT https://{Endpoint}/v2.0/lbaas/pools/d46eab56-d76b-4cd3-8952-3c3c4cf113aa

```
{
 "pool": {
 "session_persistence": null
 }
}
```

## Example Response

- Example response 1

```
{
 "pool": {
 "lb_algorithm": "LEAST_CONNECTIONS",
 "protocol": "HTTP",
 "description": "pool two",
 "loadbalancers": [
 {
 "id": "63ad9dfe-4750-479f-9630-ada43ccc8117"
 }
],
 "admin_state_up": true,
 "tenant_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "project_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "session_persistence": {
 "cookie_name": null,
 "type": "HTTP_COOKIE",
 }
 }
}
```

```
 "persistence_timeout": 1
 },
 "healthmonitor_id": null,
 "listeners": [
 {
 "id": "39de4d56-d663-46e5-85a1-5b9d5fa17829"
 }
],
 "members": [],
 "id": "12ff63af-4127-4074-a251-bcb2ecc53ebe",
 "name": "pool2"
}
}
```

- Example response 2

```
{
 "pool": {
 "lb_algorithm": "ROUND_ROBIN",
 "protocol": "HTTP",
 "description": "",
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "63ad9dfe-4750-479f-9630-ada43ccc8117"
 }
],
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "session_persistence": null,
 "healthmonitor_id": null,
 "listeners": [],
 "members": [],
 "id": "d46eab56-d76b-4cd3-8952-3c3c4cf113aa",
 "name": ""
 }
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.3.5 Deleting a Backend Server Group

#### Function

This API is used to delete a backend server group.

#### Constraints

Before deleting a backend server group, remove all backend servers, delete the health check, and disassociate forwarding policies from the backend server group by changing the value of **redirect\_pool\_id** to **null**. For details, see [Updating a Forwarding Policy](#).

#### URI

DELETE /v2.0/lbaas/pools/{pool\_id}

**Table 10-98** Parameter description

| Parameter | Mandatory | Type   | Description                                   |
|-----------|-----------|--------|-----------------------------------------------|
| pool_id   | Yes       | String | Specifies the ID of the backend server group. |

## Request

None

## Response

None

## Example Request

- Example request: Deleting a backend server group  
DELETE /v2.0/lbaas/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

## 10.1.4 Backend Server

### 10.1.4.1 Adding a Backend Server

#### Function

This API is used to add a backend server to a specific backend server group. After a backend server group is added to a listener, traffic is distributed to backend servers in this server group using the specified load balancing algorithm.

#### Constraints

Two backend servers in a backend server group cannot have the same private IP address or port number.

The subnet specified during server creation must be in the same VPC as the subnet from which the private IP address of the load balancer is assigned.

#### URI

POST /v2.0/lbaas/pools/{pool\_id}/members

**Table 10-99** Parameter description

| Parameter | Mandatory | Type   | Description                                   |
|-----------|-----------|--------|-----------------------------------------------|
| pool_id   | Yes       | String | Specifies the ID of the backend server group. |

## Request

**Table 10-100** Parameter description

| Parameter | Mandatory | Type   | Description                                                                   |
|-----------|-----------|--------|-------------------------------------------------------------------------------|
| member    | Yes       | Object | Specifies the backend server. For details, see <a href="#">Table 10-101</a> . |

**Table 10-101** member parameter description

| Parameter  | Mandatory | Type   | Description                                                                                                                                                                                                      |
|------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id  | No        | String | Specifies the ID of the project where the backend server is used.<br><br>The value must be the same as the value of <b>project_id</b> in the token.<br><br>The value contains a maximum of 255 characters.       |
| project_id | No        | String | Specifies the ID of the project to which the backend server belongs. This parameter has the same meaning as <b>tenant_id</b> .<br><br>The value must be the same as the value of <b>project_id</b> in the token. |
| name       | No        | String | Specifies the backend server name. The value is an empty character string by default.<br><br>The value contains a maximum of 255 characters.                                                                     |

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                      |
|----------------|-----------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| address        | Yes       | String  | <p>Specifies the private IP address of the backend server. This IP address must be in the subnet specified by <b>subnet_id</b>.</p> <p>This parameter can be set only to the IP address of the primary NIC, for example, 192.168.3.11.</p> <p>The value contains a maximum of 64 characters.</p> |
| protocol_port  | Yes       | Integer | <p>Specifies the port used by the backend server. The port number ranges from 1 to 65535.</p>                                                                                                                                                                                                    |
| subnet_id      | Yes       | String  | <p>Specifies the ID of the subnet where the backend server works.</p> <p>The private IP address of the backend server is in this subnet.</p> <p>Only IPv4 subnets are supported.</p>                                                                                                             |
| admin_state_up | No        | Boolean | <p>Specifies the administrative status of the backend server.</p> <p>This parameter is reserved, and the default value is <b>true</b>.</p>                                                                                                                                                       |
| weight         | No        | Integer | <p>Specifies the backend server weight. The value ranges from <b>0</b> to <b>100</b>.</p> <p>If the value is <b>0</b>, the backend server will not accept new requests. The default value is <b>1</b>.</p>                                                                                       |

## Response

**Table 10-102** Response parameters

| Parameter | Type   | Description                                                                   |
|-----------|--------|-------------------------------------------------------------------------------|
| member    | Object | Specifies the backend server. For details, see <a href="#">Table 10-103</a> . |

**Table 10-103 member** parameter description

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                        |
|----------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the backend server ID.<br><b>NOTE</b><br>The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.                                                                             |
| tenant_id      | String  | Specifies the ID of the project where the backend server is used.<br>The value contains a maximum of 255 characters.                                                                                                                                                               |
| project_id     | String  | Specifies the ID of the project to which the backend server belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                     |
| name           | String  | Specifies the backend server name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                              |
| address        | String  | Specifies the private IP address of the backend server. This IP address must be in the subnet specified by <b>subnet_id</b> .<br>This parameter can be set only to the IP address of the primary NIC, for example, 192.168.3.11.<br>The value contains a maximum of 64 characters. |
| protocol_port  | Integer | Specifies the port used by the backend server. The port number ranges from 1 to 65535.                                                                                                                                                                                             |
| subnet_id      | String  | Specifies the ID of the subnet where the backend server works. The private IP address of the backend server is in this subnet.<br>IPv6 subnets are not supported.                                                                                                                  |
| admin_state_up | Boolean | Specifies the administrative status of the backend server.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                   |



| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| weight           | Integer | Specifies the backend server weight. The value ranges from <b>0</b> to <b>100</b> .<br>If the value is <b>0</b> , the backend server will not accept new requests. The default value is <b>1</b> .                                                                                                                                                                                                                                       |
| operating_status | String  | Specifies the health check result of the backend server. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>ONLINE</b>: The backend server is running normally.</li><li>• <b>NO_MONITOR</b>: No health check is configured for the backend server group that the backend server belongs to.</li><li>• <b>OFFLINE</b>: The cloud server used as the backend server is stopped or does not exist.</li></ul> |

## Example Request

- Step 1: Query the subnet ID and IP address using the server ID. **device\_id** in the request indicates the server ID. Obtain the values of **subnet\_id** and **ip\_address** of the primary NIC (the port for which **primary\_interface** is **true**) in the response body.

GET https://{VPCEndpoint}/v2.0/ports?device\_id=f738c464-b5c2-45df-86c0-7f436620cd54

Example response

```
{
 "ports": [
 {
 "id": "94971c39-46f0-443a-85e8-31cb7497c78e",
 "name": "",
 "status": "ACTIVE",
 "admin_state_up": true,
 "fixed_ips": [
 {
 "subnet_id": "33d8b01a-bbe6-41f4-bc45-78a1d284d503",
 "ip_address": "192.168.44.11"
 }
],
 "mac_address": "fa:16:3e:5c:d2:57",
 "network_id": "1b76b9c2-9b7e-4ced-81bd-d13f7389d7c9",
 "tenant_id": "04dd36f978800fe22f9bc00bea090736",
 "project_id": "04dd36f978800fe22f9bc00bea090736",
 "device_id": "f738c464-b5c2-45df-86c0-7f436620cd54",
 "device_owner": "compute:xx-xxxx-4a",
 "security_groups": [
 "a10dfc31-0055-4b84-b36e-1291b918125c",
 "7a233393-5be2-4dff-8360-1558dd950f6e"
],
 "extra_dhcp_opts": [],
 "allowed_address_pairs": [],
 "binding:vnic_type": "normal",
 "binding:vif_details": {
 "primary_interface": true
 }
 }
]
}
```

```
 },
 "binding:profile": {},
 "port_security_enabled": true,
 "created_at": "2019-11-12T17:17:51",
 "updated_at": "2019-11-12T17:17:51"
 }
]
```

- Step 2: Use the subnet ID and IP address obtained in [Step 1](#) to add a backend server.

POST <https://{Endpoint}/v2.0/lbaas/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members>

```
{
 "member": {
 "subnet_id": "33d8b01a-bbe6-41f4-bc45-78a1d284d503",
 "protocol_port": 88,
 "name": "member-jy-tt-1",
 "address": "192.168.44.11"
 }
}
```

## Example Response

- Example response

```
{
 "member": {
 "name": "member-jy-tt-1",
 "weight": 1,
 "admin_state_up": true,
 "subnet_id": "33d8b01a-bbe6-41f4-bc45-78a1d284d503",
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "address": "192.168.44.11",
 "protocol_port": 88,
 "operating_status": "ONLINE",
 "id": "c0042496-e220-44f6-914b-e6ca33bab503"
 }
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.4.2 Querying Backend Servers

#### Function

This API is used to query backend servers in a specific backend server group. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

#### Constraints

Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query. Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

#### URI

GET [/v2.0/lbaas/pools/{pool\\_id}/members](#)

**Table 10-104** Parameter description

| Parameter | Mandatory | Type   | Description                                   |
|-----------|-----------|--------|-----------------------------------------------|
| pool_id   | Yes       | String | Specifies the ID of the backend server group. |

## Request

**Table 10-105** Parameter description

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker       | No        | String  | Specifies the ID of the backend server from which pagination query starts, that is, the ID of the last backend server on the previous page. If this parameter is not specified, the first page will be queried.<br><br>This parameter must be used together with <b>limit</b> .                                                                                                                                                   |
| limit        | No        | Integer | Specifies the number of backend servers on each page. If this parameter is not set, all backend servers are queried by default.                                                                                                                                                                                                                                                                                                   |
| page_reverse | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br><br>This parameter must be used together with <b>limit</b> . |
| id           | No        | String  | Specifies the backend server ID.<br><b>NOTE</b><br>The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.                                                                                                                                                                                                                            |

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                     |
|----------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id      | No        | String  | Specifies the ID of the project where the backend server is used.<br>The value contains a maximum of 255 characters.                                                                                                                                            |
| project_id     | No        | String  | Specifies the ID of the project to which the backend server belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                  |
| name           | No        | String  | Specifies the backend server name.<br>The value contains a maximum of 255 characters.<br><b>NOTE</b><br>The value of this parameter is not the name of server. It is the name automatically generated for the backend server associated with the load balancer. |
| address        | No        | String  | Specifies the private IP address of the backend server.<br>The value contains a maximum of 64 characters.                                                                                                                                                       |
| protocol_port  | No        | Integer | Specifies the port used by the backend server.                                                                                                                                                                                                                  |
| subnet_id      | No        | String  | Specifies the ID of the subnet where the backend server works.                                                                                                                                                                                                  |
| admin_state_up | No        | Boolean | Specifies the administrative status of the backend server.<br>This parameter is reserved, and the default value is <b>true</b> .                                                                                                                                |
| weight         | No        | Integer | Specifies the backend server weight.                                                                                                                                                                                                                            |

## Response

**Table 10-106** Response parameters

| Parameter | Type  | Description                                                                                            |
|-----------|-------|--------------------------------------------------------------------------------------------------------|
| members   | Array | Lists the backend servers in the backend server group. For details, see <a href="#">Table 10-107</a> . |

| Parameter     | Type  | Description                                                                                                                                                                                                |
|---------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| members_links | Array | Provides links to the previous or next page during pagination query, respectively.<br>This parameter exists only in the response body of pagination query. For details, see <a href="#">Table 10-108</a> . |

**Table 10-107** members parameter description

| Parameter     | Type    | Description                                                                                                                                                                                                                                                                        |
|---------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id            | String  | Specifies the backend server ID.<br><b>NOTE</b><br>The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.                                                                             |
| tenant_id     | String  | Specifies the ID of the project where the backend server is used.<br>The value contains a maximum of 255 characters.                                                                                                                                                               |
| project_id    | String  | Specifies the ID of the project to which the backend server belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                     |
| name          | String  | Specifies the backend server name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                              |
| address       | String  | Specifies the private IP address of the backend server. This IP address must be in the subnet specified by <b>subnet_id</b> .<br>This parameter can be set only to the IP address of the primary NIC, for example, 192.168.3.11.<br>The value contains a maximum of 64 characters. |
| protocol_port | Integer | Specifies the port used by the backend server. The port number ranges from 1 to 65535.                                                                                                                                                                                             |
| subnet_id     | String  | Specifies the ID of the subnet where the backend server works. The private IP address of the backend server is in this subnet.<br>IPv6 subnets are not supported.                                                                                                                  |

| Parameter        | Type    | Description                                                                                                                                                                                                                                      |
|------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up   | Boolean | Specifies the administrative status of the backend server.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul> |
| weight           | Integer | Specifies the backend server weight. The value ranges from <b>0</b> to <b>100</b> .<br>If the value is <b>0</b> , the backend server will not accept new requests. The default value is <b>1</b> .                                               |
| operating_status | String  | Specifies the operating status of the load balancer. This parameter is reserved, and its value can be <b>ONLINE</b> or <b>FROZEN</b> .                                                                                                           |

**Table 10-108** members\_links parameter description

| Parameter | Type   | Description                                                                                                                                                                                                                                                                |
|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| href      | String | Provides links to the previous or next page during pagination query, respectively.                                                                                                                                                                                         |
| rel       | String | Specifies the prompt of the previous or next page. The value can be <b>next</b> or <b>previous</b> . <ul style="list-style-type: none"><li>• <b>next</b>: indicates the URL of the next page.</li><li>• <b>previous</b>: indicates the URL of the previous page.</li></ul> |

## Example Request

- Example request 1: Querying all backend servers  
GET https://{Endpoint}/v2.0/lbaas/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members
- Example request 2: Querying the backend cloud server whose IP address is 10.0.0.8 and port number is 80  
GET https://{Endpoint}/v2.0/lbaas/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members?address=10.0.0.8&protocol\_port=80

## Example Response

- Example response 1

```
{
 "members": [
 {
 "address": "10.0.0.8",
 "admin_state_up": true,
```

```
 "id": "9a7aff27-fd41-4ec1-ba4c-3eb92c629313",
 "protocol_port": 80,
 "subnet_id": "013d3059-87a4-45a5-91e9-d721068ae0b2",
 "tenant_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "project_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "weight": 1,
 "operating_status": "ONLINE",
 "name": "member-name"
 }
]
}
```

- Example response 2

```
{
 "members": [
 {
 "address": "10.0.0.8",
 "admin_state_up": true,
 "id": "9a7aff27-fd41-4ec1-ba4c-3eb92c629313",
 "protocol_port": 80,
 "subnet_id": "013d3059-87a4-45a5-91e9-d721068ae0b2",
 "tenant_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "project_id": "1a3e005cf9ce40308c900bcb08e5320c",
 "weight": 1,
 "operating_status": "ONLINE",
 "name": "member-name"
 }
]
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.4.3 Querying Details of a Backend Server

#### Function

This API is used to query details about a backend server.

#### URI

GET /v2.0/lbaas/pools/{pool\_id}/members/{member\_id}

**Table 10-109** Parameter description

| Parameter | Mandatory | Type   | Description                                   |
|-----------|-----------|--------|-----------------------------------------------|
| pool_id   | Yes       | String | Specifies the ID of the backend server group. |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_id | Yes       | String | <p>Specifies the backend server ID.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.</li><li>You can obtain this value by calling the API described in <a href="#">Querying Backend Servers</a>.</li></ul> |

## Request

None

## Response

**Table 10-110** Response parameters

| Parameter | Type   | Description                                                                |
|-----------|--------|----------------------------------------------------------------------------|
| member    | Object | Lists the backend servers. For details, see <a href="#">Table 10-111</a> . |

**Table 10-111** member parameter description

| Parameter  | Type   | Description                                                                                                                                                                                                           |
|------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id         | String | <p>Specifies the backend server ID.</p> <p><b>NOTE</b></p> <p>The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.</p> |
| tenant_id  | String | <p>Specifies the ID of the project where the backend server is used.</p> <p>The value contains a maximum of 255 characters.</p>                                                                                       |
| project_id | String | <p>Specifies the ID of the project to which the backend server belongs. This parameter has the same meaning as <b>tenant_id</b>.</p>                                                                                  |
| name       | String | <p>Specifies the backend server name.</p> <p>The value contains a maximum of 255 characters.</p>                                                                                                                      |



| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| address          | String  | <p>Specifies the private IP address of the backend server. This IP address must be in the subnet specified by <b>subnet_id</b>.</p> <p>This parameter can be set only to the IP address of the primary NIC, for example, 192.168.3.11.</p> <p>The value contains a maximum of 64 characters.</p>                                                                                                                                                |
| protocol_port    | Integer | <p>Specifies the port used by the backend server. The port number ranges from 1 to 65535.</p>                                                                                                                                                                                                                                                                                                                                                   |
| subnet_id        | String  | <p>Specifies the ID of the subnet where the backend server works. The private IP address of the backend server is in this subnet.</p> <p>IPv6 subnets are not supported.</p>                                                                                                                                                                                                                                                                    |
| admin_state_up   | Boolean | <p>Specifies the administrative status of the backend server.</p> <p>This parameter is reserved. The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                      |
| weight           | Integer | <p>Specifies the backend server weight. The value ranges from <b>0</b> to <b>100</b>.</p> <p>If the value is <b>0</b>, the backend server will not accept new requests. The default value is <b>1</b>.</p>                                                                                                                                                                                                                                      |
| operating_status | String  | <p>Specifies the health check result of the backend server. The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>ONLINE</b>: The backend server is running normally.</li><li>• <b>NO_MONITOR</b>: No health check is configured for the backend server group that the backend server belongs to.</li><li>• <b>OFFLINE</b>: The cloud server used as the backend server is stopped or does not exist.</li></ul> |

## Example Request

- Example request: Querying details of a backend server  
GET https://{Endpoint}/v2.0/lbaas/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members/cf024846-7516-4e3a-b0fb-6590322c836f

## Example Response

- Example response

```
{
 "member": {
 "name": "",
 "weight": 1,
 "admin_state_up": true,
 "subnet_id": "823d5866-6e30-45c2-9b1a-a1ebc3757fdb",
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "address": "192.172.3.100",
 "protocol_port": 8080,
 "operating_status": "ONLINE",
 "id": "e58f5bfa-0e46-4bc5-951c-8473d3e5f24a"
 }
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.4.4 Updating a Backend Server

## Function

This API is used to update a backend server. You can modify its name and weight. You can set a larger weight for backend servers that can receive more traffic.

## Constraints

If the provisioning status of the associated load balancer is not **ACTIVE**, the backend server cannot be updated.

## URI

PUT /v2.0/lbaas/pools/{pool\_id}/members/{member\_id}

**Table 10-112** Parameter description

| Parameter | Mandatory | Type   | Description                                   |
|-----------|-----------|--------|-----------------------------------------------|
| pool_id   | Yes       | String | Specifies the ID of the backend server group. |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| member_id | Yes       | String | <p>Specifies the backend server ID.</p> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.</li><li>You can obtain this value by calling the API described in <a href="#">Querying Backend Servers</a>.</li></ul> |

## Request

**Table 10-113** Parameter description

| Parameter | Mandatory | Type   | Description                                                                   |
|-----------|-----------|--------|-------------------------------------------------------------------------------|
| member    | Yes       | Object | Specifies the backend server. For details, see <a href="#">Table 10-114</a> . |

**Table 10-114** member parameter description

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                        |
|----------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name           | No        | String  | Specifies the backend server name. The value contains a maximum of 255 characters.                                                                                                                 |
| admin_state_up | No        | Boolean | Specifies the administrative status of the backend server.<br>This parameter is reserved, and the default value is <b>true</b> .                                                                   |
| weight         | No        | Integer | Specifies the backend server weight. The value ranges from <b>0</b> to <b>100</b> .<br>If the value is <b>0</b> , the backend server will not accept new requests. The default value is <b>1</b> . |

## Response

**Table 10-115** Response parameters

| Parameter | Type   | Description                                                                   |
|-----------|--------|-------------------------------------------------------------------------------|
| member    | Object | Specifies the backend server. For details, see <a href="#">Table 10-116</a> . |

**Table 10-116** member parameter description

| Parameter     | Type    | Description                                                                                                                                                                                                                                                                        |
|---------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id            | String  | Specifies the backend server ID.<br><b>NOTE</b><br>The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.                                                                             |
| tenant_id     | String  | Specifies the ID of the project where the backend server is used.<br>The value contains a maximum of 255 characters.                                                                                                                                                               |
| project_id    | String  | Specifies the ID of the project to which the backend server belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                     |
| name          | String  | Specifies the backend server name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                              |
| address       | String  | Specifies the private IP address of the backend server. This IP address must be in the subnet specified by <b>subnet_id</b> .<br>This parameter can be set only to the IP address of the primary NIC, for example, 192.168.3.11.<br>The value contains a maximum of 64 characters. |
| protocol_port | Integer | Specifies the port used by the backend server. The port number ranges from 1 to 65535.                                                                                                                                                                                             |
| subnet_id     | String  | Specifies the ID of the subnet where the backend server works. The private IP address of the backend server is in this subnet.<br>IPv6 subnets are not supported.                                                                                                                  |

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                              |
|------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up   | Boolean | Specifies the administrative status of the backend server.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                         |
| weight           | Integer | Specifies the backend server weight. The value ranges from <b>0</b> to <b>100</b> .<br>If the value is <b>0</b> , the backend server will not accept new requests. The default value is <b>1</b> .                                                                                                                                                                                                                                       |
| operating_status | String  | Specifies the health check result of the backend server. The value can be one of the following: <ul style="list-style-type: none"><li>• <b>ONLINE</b>: The backend server is running normally.</li><li>• <b>NO_MONITOR</b>: No health check is configured for the backend server group that the backend server belongs to.</li><li>• <b>OFFLINE</b>: The cloud server used as the backend server is stopped or does not exist.</li></ul> |

## Example Request

- Example request: Updating the name and weight of a backend server  
PUT https://{Endpoint}/v2.0/lbaas/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members/c0042496-e220-44f6-914b-e6ca33bab503

```
{
 "member": {
 "name": "member create test",
 "weight": 10
 }
}
```

## Example Response

- Example response

```
{
 "member": {
 "name": "member-jy-tt-1",
 "weight": 1,
 "admin_state_up": true,
 "subnet_id": "33d8b01a-bbe6-41f4-bc45-78a1d284d503",
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "address": "192.168.44.11",
 "protocol_port": 88,
 "operating_status": "ONLINE",
 }
}
```

```
{
 "id": "c0042496-e220-44f6-914b-e6ca33bab503"
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.4.5 Removing a Backend Server

## Function

This API is used to remove a backend server by its ID.

## Constraints

After you remove a backend server, new connections to this server will not be established. However, long connections that have been established will be maintained.

## URI

DELETE /v2.0/lbaas/pools/{pool\_id}/members/{member\_id}

**Table 10-117** Parameter description

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                     |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pool_id   | Yes       | String | Specifies the ID of the backend server group.                                                                                                                                                                                                                                                                                                                   |
| member_id | Yes       | String | Specifies the backend server ID.<br><b>NOTE</b> <ul style="list-style-type: none"><li>The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.</li><li>You can obtain this value by calling the API described in <a href="#">Querying Backend Servers</a>.</li></ul> |

## Request

None

## Response

None

## Example Request

- Example request: Removing a backend server  
DELETE https://{Endpoint}/v2.0/lbaas/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members/cf024846-7516-4e3a-b0fb-6590322c836f

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

# 10.1.5 Health Check

## 10.1.5.1 Configuring a Health Check

### Function

This API is used to configure a health check for a backend server group to check the status of backend servers. If the health check result is **OFFLINE**, backend servers are considered unhealthy. You need to check the server configuration.

### Constraints

The security group must allow access from 100.125.0.0/16. Otherwise, the health check cannot be performed.

If UDP is used for the health check, the protocol of the backend server group must be UDP.

### URI

POST /v2.0/lbaas/healthmonitors

### Request

**Table 10-118** Parameter description

| Parameter     | Mandatory | Type   | Description                                                                 |
|---------------|-----------|--------|-----------------------------------------------------------------------------|
| healthmonitor | Yes       | Object | Specifies the health check. For details, see <a href="#">Table 10-119</a> . |

**Table 10-119 healthmonitor** parameter description

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                          |
|------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id        | No        | String  | <p>Specifies the ID of the project where the health check is performed.</p> <p>The value must be the same as the value of <b>project_id</b> in the token.</p> <p>The value contains a maximum of 255 characters.</p> |
| project_id       | No        | String  | <p>Specifies the ID of the project to which the health check belongs. This parameter has the same meaning as <b>tenant_id</b>.</p> <p>The value must be the same as the value of <b>project_id</b> in the token.</p> |
| name             | No        | String  | <p>Specifies the health check name.</p> <p>The value contains a maximum of 255 characters.</p>                                                                                                                       |
| delay            | Yes       | Integer | <p>Specifies the maximum time between health checks in the unit of second. The value ranges from <b>1</b> to <b>50</b>.</p>                                                                                          |
| max_retries      | Yes       | Integer | <p>Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b>.</p> <p>The value ranges from <b>1</b> to <b>10</b>.</p>          |
| max_retries_down | No        | Integer | <p>Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b>.</p> <p>The value ranges from <b>1</b> to <b>10</b>.</p>          |
| pool_id          | Yes       | String  | <p>Specifies the ID of the backend server group.</p> <p>Only one health check can be configured for each backend server group.</p>                                                                                   |
| admin_state_up   | No        | Boolean | <p>Specifies the administrative status of the health check.</p> <p>This parameter is reserved, and the default value is <b>true</b>.</p>                                                                             |



| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| timeout      | Yes       | Integer | <p>Specifies the health check timeout duration in the unit of second. The value ranges from <b>1</b> to <b>50</b>.</p> <p><b>NOTE</b><br/>You are advised to set the value less than that of parameter <b>delay</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                     |
| type         | Yes       | String  | <p>Specifies the health check protocol. The value can be <b>TCP</b>, <b>UDP_CONNECT</b>, or <b>HTTP</b>.</p> <p>The relationships between the health check protocol and the protocol used by the backend server group are as follows:</p> <ul style="list-style-type: none"><li>• If the protocol of the backend server group is UDP, the parameter value can only be <b>UDP_CONNECT</b>.</li><li>• If the protocol of the backend server group is TCP, the parameter value can be <b>TCP</b> or <b>HTTP</b>.</li><li>• If the protocol of the backend server group is HTTP, the parameter value can be <b>TCP</b> or <b>HTTP</b>.</li></ul> |
| monitor_port | No        | Integer | <p>Specifies the health check port. The port number ranges from 1 to 65535.</p> <p>The value is left blank by default, indicating that the port of the backend server is used as the health check port.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Parameter      | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_name    | No        | String | <p>Specifies the domain name of HTTP requests during the health check.</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example, <b>www.test.com</b>.</p> <p>The value contains a maximum of 100 characters.</p> |
| url_path       | No        | String | <p>Specifies the HTTP request path for the health check. The default value is /, and the value must start with a slash (/).</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>An example value is <b>/test</b>.</p> <p>The value contains a maximum of 80 characters.</p>                                                                                                                                                                                                                         |
| expected_codes | No        | String | <p>Specifies the expected HTTP status code. The following options are available:</p> <p>A single value, such as <b>200</b></p> <p>A list of values, such as <b>200,202</b></p> <p>A value range, such as <b>200-204</b></p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>The value contains a maximum of 64 characters.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p>                                                                                                                   |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| http_method | No        | String | <p>Specifies the HTTP request method. The default value is <b>GET</b>.</p> <p>The value can be <b>GET</b>, <b>HEAD</b>, <b>POST</b>, <b>PUT</b>, <b>DELETE</b>, <b>TRACE</b>, <b>OPTIONS</b>, <b>CONNECT</b>, or <b>PATCH</b>.</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p> |

## Response

**Table 10-120** Response parameters

| Parameter     | Type   | Description                                                                 |
|---------------|--------|-----------------------------------------------------------------------------|
| healthmonitor | Object | Specifies the health check. For details, see <a href="#">Table 10-121</a> . |

**Table 10-121** healthmonitor parameter description

| Parameter        | Type    | Description                                                                                                                                                                                     |
|------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id               | String  | Specifies the health check ID.                                                                                                                                                                  |
| tenant_id        | String  | Specifies the ID of the project where the health check is performed.                                                                                                                            |
| project_id       | String  | Specifies the ID of the project to which the health check belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                    |
| name             | String  | Specifies the health check name.                                                                                                                                                                |
| delay            | Integer | Specifies the maximum time between health checks in the unit of second. The value ranges from <b>1</b> to <b>50</b> .                                                                           |
| max_retries      | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> . The value ranges from <b>1</b> to <b>10</b> . |
| max_retries_down | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> . The value ranges from <b>1</b> to <b>10</b> . |

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pools          | Array   | Specifies the ID of the backend server group associated with the health check. For details, see <a href="#">Table 10-122</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| admin_state_up | Boolean | <p>Specifies the administrative status of the health check.</p> <p>This parameter is reserved. The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                                                                                                                                                                                                         |
| timeout        | Integer | <p>Specifies the health check timeout duration in the unit of second. The value ranges from <b>1</b> to <b>50</b>.</p> <p><b>NOTE</b><br/>You are advised to set the value less than that of parameter <b>delay</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                         |
| type           | String  | <p>Specifies the health check protocol.</p> <p>The value can be <b>TCP</b>, <b>UDP_CONNECT</b>, or <b>HTTP</b>.</p> <p>The relationships between the value of this parameter and the protocol of the backend server group are as follows:</p> <ul style="list-style-type: none"><li>• If the protocol of the backend server group is UDP, the parameter value can only be <b>UDP_CONNECT</b>.</li><li>• If the protocol of the backend server group is TCP, the parameter value can be <b>TCP</b> or <b>HTTP</b>.</li><li>• If the protocol of the backend server group is HTTP, the parameter value can be <b>TCP</b> or <b>HTTP</b>.</li></ul> |
| monitor_port   | Integer | <p>Specifies the health check port. The port number ranges from 1 to 65535.</p> <p>The value is left blank by default, indicating that the port of the backend server is used as the health check port.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Parameter      | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| expected_codes | String | <p>Specifies the expected HTTP status code. The following options are available:</p> <p>A single value, such as <b>200</b></p> <p>A list of values, such as <b>200,202</b></p> <p>A value range, such as <b>200-204</b></p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>Currently, this parameter is not supported and is fixed at <b>200</b>.</p>                                                                                       |
| domain_name    | String | <p>Specifies the domain name of HTTP requests during the health check.</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example, <b>www.test.com</b>.</p> |
| url_path       | String | <p>Specifies the HTTP request path for the health check. The default value is <b>/</b>, and the value must start with a slash (/).</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>An example value is <b>/test</b>.</p>                                                                                                                                                                                                                 |
| http_method    | String | <p>Specifies the HTTP request method. The default value is <b>GET</b>.</p> <p>The value can be <b>GET</b>, <b>HEAD</b>, <b>POST</b>, <b>PUT</b>, <b>DELETE</b>, <b>TRACE</b>, <b>OPTIONS</b>, <b>CONNECT</b>, or <b>PATCH</b>.</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p>                                                                                                           |

**Table 10-122** pools parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

## Example Request

- Example request: Configuring a health check  
POST `https://{Endpoint}/v2.0/lbaas/healthmonitors`

```
{
 "healthmonitor": {
 "admin_state_up": true,
 "pool_id": "bb44bffb-05d9-412c-9d9c-b189d9e14193",
 "domain_name": "www.test.com",
 "delay": 10,
 "max_retries": 10,
 "max_retries_down": 5,
 "timeout": 10,
 "type": "HTTP"
 }
}
```

## Example Response

- Example response

```
{
 "healthmonitor": {
 "name": "",
 "admin_state_up": true,
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "domain_name": "www.test.com",
 "delay": 10,
 "max_retries": 10,
 "expected_codes": "200",
 "max_retries_down": 5,
 "http_method": "GET",
 "timeout": 10,
 "pools": [
 {
 "id": "bb44bffb-05d9-412c-9d9c-b189d9e14193"
 }
],
 "url_path": "/",
 "type": "HTTP",
 "id": "2dca3867-98c5-4cde-8f2c-b89ae6bd7e36",
 "monitor_port": 112
 }
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.5.2 Querying Health Checks

#### Function

This API is used to query the health checks. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

#### URI

GET `/v2.0/lbaas/healthmonitors`

## Constraints

Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query. Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

## Request

**Table 10-123** Parameter description

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|--------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker       | No        | String  | Specifies the ID of the health check from which pagination query starts, that is, the ID of the last health check on the previous page.<br><br>This parameter must be used together with <b>limit</b> .                                                                                                                                                                                                                           |
| limit        | No        | Integer | Specifies the number of health checks on each page. If this parameter is not set, all health checks are queried by default.                                                                                                                                                                                                                                                                                                       |
| page_reverse | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br><br>This parameter must be used together with <b>limit</b> . |
| id           | No        | String  | Specifies the health check ID.                                                                                                                                                                                                                                                                                                                                                                                                    |
| tenant_id    | No        | String  | Specifies the ID of the project where the health check is performed.<br><br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                       |
| project_id   | No        | String  | Specifies the ID of the project to which the health check belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                      |
| name         | No        | String  | Specifies the health check name.<br><br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                           |
| delay        | No        | Integer | Specifies the maximum time between health checks in the unit of second. The value ranges from <b>1</b> to <b>50</b> .                                                                                                                                                                                                                                                                                                             |

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                    |
|------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| max_retries      | No        | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> . The value ranges from <b>1</b> to <b>10</b> .                                                                                                                                                                                                |
| max_retries_down | No        | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> . The value ranges from <b>1</b> to <b>10</b> .                                                                                                                                                                                                |
| admin_state_up   | No        | Boolean | Specifies the administrative status of the health check.<br>This parameter is reserved, and the default value is <b>true</b> .                                                                                                                                                                                                                                                                 |
| timeout          | No        | Integer | Specifies the health check timeout duration in the unit of second. The value ranges from <b>1</b> to <b>50</b> .<br><b>NOTE</b><br>You are advised to set the value less than that of parameter <b>delay</b> .                                                                                                                                                                                 |
| type             | No        | String  | Specifies the health check protocol.<br>The value can be <b>TCP</b> , <b>UDP_CONNECT</b> , or <b>HTTP</b> .                                                                                                                                                                                                                                                                                    |
| monitor_port     | No        | Integer | Specifies the port used for the health check.<br>The value is left blank by default, indicating that the port of the backend server is used as the health check port.                                                                                                                                                                                                                          |
| expected_codes   | No        | String  | Specifies the expected HTTP status code. The following options are available:<br>A single value, such as <b>200</b><br>A list of values, such as <b>200,202</b><br>A value range, such as <b>200-204</b><br>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b> .<br>The value contains a maximum of 64 characters.<br><b>NOTE</b><br>This parameter is reserved. |



| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|-------------|-----------|--------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain_name | No        | String | <p>Specifies the domain name of HTTP requests during the health check.</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example, <b>www.test.com</b>.</p> <p>The value contains a maximum of 100 characters.</p> |
| url_path    | No        | String | <p>Specifies the HTTP request path for the health check. The default value is /, and the value must start with a slash (/).</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>An example value is <b>/test</b>.</p> <p>The value contains a maximum of 80 characters.</p>                                                                                                                                                                                                                         |
| http_method | No        | String | <p>Specifies the HTTP request method. The default value is <b>GET</b>.</p> <p>The value can be <b>GET</b>, <b>HEAD</b>, <b>POST</b>, <b>PUT</b>, <b>DELETE</b>, <b>TRACE</b>, <b>OPTIONS</b>, <b>CONNECT</b>, or <b>PATCH</b>.</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p>                                                                                                                                                                  |

## Response

**Table 10-124** Response parameters

| Parameter      | Type  | Description                                                              |
|----------------|-------|--------------------------------------------------------------------------|
| healthmonitors | Array | Lists the health checks. For details, see <a href="#">Table 10-125</a> . |

| Parameter            | Type  | Description                                                                                                                                                                                                       |
|----------------------|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| healthmonitors_links | Array | Provides links to the previous or next page during pagination query, respectively.<br><br>This parameter exists only in the response body of pagination query.<br>For details, see <a href="#">Table 10-127</a> . |

**Table 10-125 healthmonitors** parameter description

| Parameter        | Type    | Description                                                                                                                                                                                                                                    |
|------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id               | String  | Specifies the health check ID.                                                                                                                                                                                                                 |
| tenant_id        | String  | Specifies the ID of the project where the health check is performed.                                                                                                                                                                           |
| project_id       | String  | Specifies the ID of the project to which the health check belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                   |
| name             | String  | Specifies the health check name.<br>The value contains a maximum of 255 characters.                                                                                                                                                            |
| delay            | Integer | Specifies the maximum time between health checks in the unit of second. The value ranges from <b>1</b> to <b>50</b> .                                                                                                                          |
| max_retries      | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> .<br>The value ranges from <b>1</b> to <b>10</b> .                                             |
| max_retries_down | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> .<br>The value ranges from <b>1</b> to <b>10</b> .                                             |
| pools            | Array   | Lists the IDs of backend server groups associated with the health check.                                                                                                                                                                       |
| admin_state_up   | Boolean | Specifies the administrative status of the health check.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul> |

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| timeout        | Integer | Specifies the health check timeout duration in the unit of second. The value ranges from <b>1</b> to <b>50</b> .<br><b>NOTE</b><br>You are advised to set the value less than that of parameter <b>delay</b> .                                                                                                                                                                                                                                                                                                             |
| type           | String  | Specifies the health check protocol.<br>The value can be <b>TCP</b> , <b>UDP_CONNECT</b> , or <b>HTTP</b> .                                                                                                                                                                                                                                                                                                                                                                                                                |
| monitor_port   | Integer | Specifies the health check port. The port number ranges from 1 to 65535.<br>The value is left blank by default, indicating that the port of the backend server is used as the health check port.                                                                                                                                                                                                                                                                                                                           |
| expected_codes | String  | Specifies the expected HTTP status code. The following options are available:<br>A single value, such as <b>200</b><br>A list of values, such as <b>200,202</b><br>A value range, such as <b>200-204</b><br>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b> .<br>The value contains a maximum of 64 characters.                                                                                                                                                                           |
| domain_name    | String  | Specifies the domain name of HTTP requests during the health check.<br>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b> .<br>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.<br>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example, <b>www.test.com</b> .<br>The value contains a maximum of 100 characters. |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| url_path    | String | <p>Specifies the HTTP request path for the health check. The default value is <code>/</code>, and the value must start with a slash (<code>/</code>).</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>An example value is <code>/test</code>.</p> <p>The value contains a maximum of 80 characters.</p>                        |
| http_method | String | <p>Specifies the HTTP request method. The default value is <b>GET</b>.</p> <p>The value can be <b>GET</b>, <b>HEAD</b>, <b>POST</b>, <b>PUT</b>, <b>DELETE</b>, <b>TRACE</b>, <b>OPTIONS</b>, <b>CONNECT</b>, or <b>PATCH</b>.</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p> |

**Table 10-126** pools parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

**Table 10-127** healthmonitors\_links parameter description

| Parameter | Type   | Description                                                                                                                                                                                                                                                                     |
|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| href      | String | Provides links to the previous or next page during pagination query, respectively.                                                                                                                                                                                              |
| rel       | String | <p>Specifies the prompt of the previous or next page.</p> <p>The value can be <b>next</b> or <b>previous</b>. The value <b>next</b> indicates the href containing the URL of the next page, and <b>previous</b> indicates the href containing the URL of the previous page.</p> |

## Example Request

- Example request 1: Querying all health checks  
GET https://{Endpoint}/v2.0/lbaas/healthmonitors
- Example request 2: Querying HTTP health checks  
GET https://{Endpoint}/v2.0/lbaas/healthmonitors?type=HTTP

## Example Response

- Example response 1

```
{
 "healthmonitors": [
 {
 "monitor_port": null,
 "name": "",
 "admin_state_up": true,
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "domain_name": null,
 "delay": 5,

 "max_retries": 3,
 "max_retries_down": 5,
 "http_method": "GET",
 "timeout": 10,
 "pools": [
 {
 "id": "caef8316-6b65-4676-8293-cf41fb63cc2a"
 }
],
 "url_path": "/",
 "type": "HTTP",
 "id": "1b587819-d619-49c1-9101-fe72d8b361ef"
 }
]
}
```

- Example response 2

```
{
 "healthmonitors": [
 {
 "monitor_port": null,
 "name": "",
 "admin_state_up": true,
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "project_id": "601240b9c5c94059b63d484c92cfe308",
 "domain_name": null,
 "delay": 5,
 "expected_codes": "200-204,300-302,401",
 "max_retries": 3,
 "max_retries_down": 5,
 "http_method": "GET",
 "timeout": 10,
 "pools": [
 {
 "id": "caef8316-6b65-4676-8293-cf41fb63cc2a"
 }
],
 "url_path": "/",
 "type": "HTTP",
 "id": "1b587819-d619-49c1-9101-fe72d8b361ef"
 }
]
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.5.3 Querying Details of a Health Check

#### Function

This API is used to query details about a health check using its ID.

#### URI

GET /v2.0/lbaas/healthmonitors/{healthmonitor\_id}

**Table 10-128** Parameter description

| Parameter        | Mandator<br>y | Type   | Description                    |
|------------------|---------------|--------|--------------------------------|
| healthmonitor_id | Yes           | String | Specifies the health check ID. |

#### Request

None

#### Response

**Table 10-129** Response parameters

| Parameter     | Type   | Description                                                                 |
|---------------|--------|-----------------------------------------------------------------------------|
| healthmonitor | Object | Specifies the health check. For details, see <a href="#">Table 10-130</a> . |

**Table 10-130** healthmonitor parameter description

| Parameter  | Type    | Description                                                                                                                  |
|------------|---------|------------------------------------------------------------------------------------------------------------------------------|
| id         | String  | Specifies the health check ID.                                                                                               |
| tenant_id  | String  | Specifies the ID of the project where the health check is performed.                                                         |
| project_id | String  | Specifies the ID of the project to which the health check belongs. This parameter has the same meaning as <b>tenant_id</b> . |
| name       | String  | Specifies the health check name.                                                                                             |
| delay      | Integer | Specifies the maximum time between health checks in the unit of second. The value ranges from <b>1</b> to <b>50</b> .        |

| Parameter        | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|------------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| max_retries      | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> . The value ranges from <b>1</b> to <b>10</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| max_retries_down | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> . The value ranges from <b>1</b> to <b>10</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| pools            | Array   | Specifies the ID of the backend server group associated with the health check. For details, see <a href="#">Table 10-122</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| admin_state_up   | Boolean | <p>Specifies the administrative status of the health check.</p> <p>This parameter is reserved. The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                                                                                                                                                                                                         |
| timeout          | Integer | <p>Specifies the health check timeout duration in the unit of second. The value ranges from <b>1</b> to <b>50</b>.</p> <p><b>NOTE</b><br/>You are advised to set the value less than that of parameter <b>delay</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                         |
| type             | String  | <p>Specifies the health check protocol.</p> <p>The value can be <b>TCP</b>, <b>UDP_CONNECT</b>, or <b>HTTP</b>.</p> <p>The relationships between the value of this parameter and the protocol of the backend server group are as follows:</p> <ul style="list-style-type: none"><li>• If the protocol of the backend server group is UDP, the parameter value can only be <b>UDP_CONNECT</b>.</li><li>• If the protocol of the backend server group is TCP, the parameter value can be <b>TCP</b> or <b>HTTP</b>.</li><li>• If the protocol of the backend server group is HTTP, the parameter value can be <b>TCP</b> or <b>HTTP</b>.</li></ul> |
| monitor_port     | Integer | <p>Specifies the health check port. The port number ranges from 1 to 65535.</p> <p>The value is left blank by default, indicating that the port of the backend server is used as the health check port.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Parameter      | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| expected_codes | String | <p>Specifies the expected HTTP status code. The following options are available:</p> <p>A single value, such as <b>200</b></p> <p>A list of values, such as <b>200,202</b></p> <p>A value range, such as <b>200-204</b></p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>Currently, this parameter is not supported and is fixed at <b>200</b>.</p>                                                                                       |
| domain_name    | String | <p>Specifies the domain name of HTTP requests during the health check.</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example, <b>www.test.com</b>.</p> |
| url_path       | String | <p>Specifies the HTTP request path for the health check. The default value is <b>/</b>, and the value must start with a slash (/).</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>An example value is <b>/test</b>.</p>                                                                                                                                                                                                                 |
| http_method    | String | <p>Specifies the HTTP request method. The default value is <b>GET</b>.</p> <p>The value can be <b>GET</b>, <b>HEAD</b>, <b>POST</b>, <b>PUT</b>, <b>DELETE</b>, <b>TRACE</b>, <b>OPTIONS</b>, <b>CONNECT</b>, or <b>PATCH</b>.</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p>                                                                                                           |

**Table 10-131** pools parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |



## Example Request

- Example request: Querying details of a health check  
GET https://{Endpoint}/v2.0/lbaas/healthmonitors/b7633ade-24dc-4d72-8475-06aa22be5412

## Example Response

- Example response

```
{
 "healthmonitor": {
 "name": "",
 "admin_state_up": true,
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "domain_name": null,
 "delay": 10,
 "expected_codes": "200-204,300-302,401",
 "max_retries": 10,
 "max_retries_down": 5,
 "http_method": "GET",
 "timeout": 10,
 "pools": [
 {
 "id": "bb44bffb-05d9-412c-9d9c-b189d9e14193"
 }
],
 "url_path": "/",
 "type": "HTTP",
 "id": "61c24cba-19bb-45c1-a013-7565e5f98872",
 "monitor_port": 112
 }
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.5.4 Updating a Health Check

#### Function

This API is used to update a health check.

#### Constraints

If **provisioning\_status** of the load balancer for which the health check is configured is not **ACTIVE**, the health check cannot be updated.

#### URI

PUT /v2.0/lbaas/healthmonitors/{healthmonitor\_id}

**Table 10-132** Parameter description

| Parameter        | Mandator<br>y | Type   | Description                    |
|------------------|---------------|--------|--------------------------------|
| healthmonitor_id | Yes           | String | Specifies the health check ID. |

## Request

**Table 10-133** Parameter description

| Parameter     | Mandatory | Type   | Description                                                                 |
|---------------|-----------|--------|-----------------------------------------------------------------------------|
| healthmonitor | Yes       | Object | Specifies the health check. For details, see <a href="#">Table 10-134</a> . |

**Table 10-134** healthmonitor parameter description

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                    |
|------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name             | No        | String  | Specifies the health check name.<br>The value contains a maximum of 255 characters.                                                                                                                            |
| delay            | No        | Integer | Specifies the maximum time between health checks in the unit of second.<br>The value ranges from <b>1</b> to <b>50</b> .                                                                                       |
| max_retries      | No        | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> . The value ranges from <b>1</b> to <b>10</b> .                |
| max_retries_down | No        | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> . The value ranges from <b>1</b> to <b>10</b> .                |
| admin_state_up   | No        | Boolean | Specifies the administrative status of the health check.<br>This parameter is reserved, and the default value is <b>true</b> .                                                                                 |
| timeout          | No        | Integer | Specifies the health check timeout duration in the unit of second. The value ranges from <b>1</b> to <b>50</b> .<br><b>NOTE</b><br>You are advised to set the value less than that of parameter <b>delay</b> . |
| type             | No        | String  | Specifies the health check protocol.<br>The value can be <b>TCP</b> , <b>UDP_CONNECT</b> , or <b>HTTP</b> .                                                                                                    |

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|----------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| monitor_port   | No        | Integer | <p>Specifies the health check port. The port number ranges from 1 to 65535.</p> <p>The value is left blank by default, indicating that the port of the backend server is used as the health check port.</p>                                                                                                                                                                                                                                                                                                                                     |
| expected_codes | No        | String  | <p>Specifies the expected HTTP status code. The following options are available:</p> <p>A single value, such as <b>200</b></p> <p>A list of values, such as <b>200,202</b></p> <p>A value range, such as <b>200-204</b></p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p>                                                                                                                                                                                                                            |
| domain_name    | No        | String  | <p>Specifies the domain name of HTTP requests during the health check.</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example, <b>www.test.com</b>.</p> <p>The value contains a maximum of 100 characters.</p> |
| url_path       | No        | String  | <p>Specifies the HTTP request path for the health check. The default value is /, and the value must start with a slash (/).</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>An example value is <b>/test</b>.</p> <p>The value contains a maximum of 80 characters.</p>                                                                                                                                                                                                                         |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                    |
|-------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| http_method | No        | String | <p>Specifies the HTTP request method. The default value is <b>GET</b>.</p> <p>The value can be <b>GET</b>, <b>HEAD</b>, <b>POST</b>, <b>PUT</b>, <b>DELETE</b>, <b>TRACE</b>, <b>OPTIONS</b>, <b>CONNECT</b>, or <b>PATCH</b>.</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p> |

## Response

**Table 10-135** Response parameters

| Parameter     | Type   | Description                                                                 |
|---------------|--------|-----------------------------------------------------------------------------|
| healthmonitor | Object | Specifies the health check. For details, see <a href="#">Table 10-136</a> . |

**Table 10-136** healthmonitor parameter description

| Parameter        | Type    | Description                                                                                                                                                                                     |
|------------------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id               | String  | Specifies the health check ID.                                                                                                                                                                  |
| tenant_id        | String  | Specifies the ID of the project where the health check is performed.                                                                                                                            |
| project_id       | String  | Specifies the ID of the project to which the health check belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                    |
| name             | String  | Specifies the health check name.                                                                                                                                                                |
| delay            | Integer | Specifies the maximum time between health checks in the unit of second. The value ranges from <b>1</b> to <b>50</b> .                                                                           |
| max_retries      | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>OFFLINE</b> to <b>ONLINE</b> . The value ranges from <b>1</b> to <b>10</b> . |
| max_retries_down | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from <b>ONLINE</b> to <b>OFFLINE</b> . The value ranges from <b>1</b> to <b>10</b> . |

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| pools          | Array   | Specifies the ID of the backend server group associated with the health check. For details, see <a href="#">Table 10-122</a> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| admin_state_up | Boolean | <p>Specifies the administrative status of the health check.</p> <p>This parameter is reserved. The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                                                                                                                                                                                                         |
| timeout        | Integer | <p>Specifies the health check timeout duration in the unit of second. The value ranges from <b>1</b> to <b>50</b>.</p> <p><b>NOTE</b><br/>You are advised to set the value less than that of parameter <b>delay</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                         |
| type           | String  | <p>Specifies the health check protocol.</p> <p>The value can be <b>TCP</b>, <b>UDP_CONNECT</b>, or <b>HTTP</b>.</p> <p>The relationships between the value of this parameter and the protocol of the backend server group are as follows:</p> <ul style="list-style-type: none"><li>• If the protocol of the backend server group is UDP, the parameter value can only be <b>UDP_CONNECT</b>.</li><li>• If the protocol of the backend server group is TCP, the parameter value can be <b>TCP</b> or <b>HTTP</b>.</li><li>• If the protocol of the backend server group is HTTP, the parameter value can be <b>TCP</b> or <b>HTTP</b>.</li></ul> |
| monitor_port   | Integer | <p>Specifies the health check port. The port number ranges from 1 to 65535.</p> <p>The value is left blank by default, indicating that the port of the backend server is used as the health check port.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                      |

| Parameter      | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| expected_codes | String | <p>Specifies the expected HTTP status code. The following options are available:</p> <p>A single value, such as <b>200</b></p> <p>A list of values, such as <b>200,202</b></p> <p>A value range, such as <b>200-204</b></p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>Currently, this parameter is not supported and is fixed at <b>200</b>.</p>                                                                                       |
| domain_name    | String | <p>Specifies the domain name of HTTP requests during the health check.</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example, <b>www.test.com</b>.</p> |
| url_path       | String | <p>Specifies the HTTP request path for the health check. The default value is <b>/</b>, and the value must start with a slash (/).</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p>An example value is <b>/test</b>.</p>                                                                                                                                                                                                                 |
| http_method    | String | <p>Specifies the HTTP request method. The default value is <b>GET</b>.</p> <p>The value can be <b>GET</b>, <b>HEAD</b>, <b>POST</b>, <b>PUT</b>, <b>DELETE</b>, <b>TRACE</b>, <b>OPTIONS</b>, <b>CONNECT</b>, or <b>PATCH</b>.</p> <p>This parameter is valid only when the value of <b>type</b> is set to <b>HTTP</b>.</p> <p><b>NOTE</b><br/>This parameter is reserved.</p>                                                                                                           |

**Table 10-137** pools parameter description

| Parameter | Type   | Description                                              |
|-----------|--------|----------------------------------------------------------|
| id        | String | Specifies the ID of the associated backend server group. |

## Example Request

- Example request: Updating a health check  
PUT https://{Endpoint}/v2.0/lbaas/healthmonitors/b7633ade-24dc-4d72-8475-06aa22be5412  

```
{
 "healthmonitor": {
 "delay": 15,
 "name": "health-xx",
 "timeout": 12
 }
}
```

## Example Response

- Example response  

```
{
 "healthmonitor": {
 "name": "health-xx",
 "admin_state_up": true,
 "tenant_id": "145483a5107745e9b3d80f956713e6a3",
 "project_id": "145483a5107745e9b3d80f956713e6a3",
 "domain_name": null,
 "delay": 15,
 "expected_codes": "200",
 "max_retries": 10,
 "max_retries_down": 5,
 "http_method": "GET",
 "timeout": 12,
 "pools": [
 {
 "id": "bb44bffb-05d9-412c-9d9c-b189d9e14193"
 }
],
 "url_path": "/",
 "type": "HTTP",
 "id": "2dca3867-98c5-4cde-8f2c-b89ae6bd7e36",
 "monitor_port": 112
 }
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.5.5 Deleting a Health Check

## Function

This API is used to delete a health check.

## Constraints

If **provisioning\_status** of the load balancer for which the health check is configured is not **ACTIVE**, the health check cannot be deleted.

## URI

DELETE /v2.0/lbaas/healthmonitors/{healthmonitor\_id}

**Table 10-138** Parameter description

| Parameter        | Mandatory | Type   | Description                    |
|------------------|-----------|--------|--------------------------------|
| healthmonitor_id | Yes       | String | Specifies the health check ID. |

## Request

None

## Response

None

## Example Request

- Example request: Deleting a health check  
DELETE https://{Endpoint}/v2.0/lbaas/healthmonitors/b7633ade-24dc-4d72-8475-06aa22be5412

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

## 10.1.6 Forwarding Policy

### 10.1.6.1 Adding a Forwarding Policy

#### Function

This API is used to add a forwarding policy. The listener and forwarding policy determine how traffic is forwarded to backend servers.

- By matching the URL or domain name specified in the forwarding policy when **action** is set to **REDIRECT\_TO\_POOL**, the load balancer distributes the traffic to backend servers in a specific backend server group.
- When **action** is set to **REDIRECT\_TO\_LISTENER**, the HTTP listener is redirected to an HTTPS listener, and requests are routed by the HTTPS listener.

#### Constraints

Currently, only redirects from an HTTP listener to an HTTPS listener are supported. When **action** is set to **REDIRECT\_TO\_LISTENER**, the listener specified by **listener\_id** can only be an HTTP listener, and the listener specified by **redirect\_listener\_id** can only be an HTTPS listener.



The load balancer of the HTTPS listener to which traffic is redirected must be the same as that of the HTTP listener.

URI

POST /v2.0/lbaas/l7policies

Request

Table 10-139 Parameter description

| Parameter | Mandatory | Type   | Description                                                                      |
|-----------|-----------|--------|----------------------------------------------------------------------------------|
| l7policy  | Yes       | Object | Specifies the forwarding policy. For details, see <a href="#">Table 10-140</a> . |

Table 10-140 l7policy parameter description

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                         |
|----------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id      | No        | String  | Specifies the ID of the project where the forwarding policy is used.<br><br>The value must be the same as the value of <b>tenant_id</b> in the token.<br><br>The value contains a maximum of 255 characters.        |
| project_id     | No        | String  | Specifies the ID of the project to which the forwarding policy belongs. This parameter has the same meaning as <b>tenant_id</b> .<br><br>The value must be the same as the value of <b>project_id</b> in the token. |
| name           | No        | String  | Specifies the forwarding policy name.<br><br>The value contains a maximum of 255 characters.                                                                                                                        |
| admin_state_up | No        | Boolean | Specifies the administrative status of the forwarding policy.<br><br>This parameter is reserved, and the default value is <b>true</b> .                                                                             |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|-----------|--------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| description | No        | String | Provides supplementary information about the forwarding policy.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                           |
| listener_id | Yes       | String | Specifies the ID of the listener to which the forwarding policy is added. <ul style="list-style-type: none"><li>When <b>action</b> is set to <b>REDIRECT_TO_POOL</b>, forwarding policies can be added to a listener with <b>protocol</b> set to <b>HTTP</b> or <b>TERMINATED_HTTPS</b>.</li><li>When <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, forwarding policies can be added to a listener with <b>protocol</b> set to <b>HTTP</b>.</li></ul>                                                 |
| action      | Yes       | String | Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener.<br>The value can be one of the following: <ul style="list-style-type: none"><li><b>REDIRECT_TO_POOL</b>: Requests are forwarded to the backend server group specified by <b>redirect_pool_id</b>.</li><li><b>REDIRECT_TO_LISTENER</b>: Requests are redirected from the HTTP listener specified by <b>listener_id</b> to the HTTPS listener specified by <b>redirect_listener_id</b>.</li></ul> |

| Parameter            | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|----------------------|-----------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_pool_id     | No        | String  | <p>Specifies the ID of the backend server group to which traffic is forwarded. The default value is <b>null</b>.</p> <p>This parameter is mandatory when <b>action</b> is set to <b>REDIRECT_TO_POOL</b>.</p> <p>This parameter cannot be specified when <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>.</p> <p>The backend server group must meet the following requirements:</p> <ul style="list-style-type: none"><li>• Cannot be the default backend server group of the listener.</li><li>• Cannot be the backend server group used by forwarding policies of other listeners.</li></ul> |
| redirect_listener_id | No        | String  | <p>Specifies the ID of the listener to which the traffic is redirected. The default value is <b>null</b>.</p> <p>This parameter cannot be specified when <b>action</b> is set to <b>REDIRECT_TO_POOL</b>.</p> <p>This parameter is mandatory when <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>, and the listener:</p> <ul style="list-style-type: none"><li>• Can only be an HTTPS listener.</li><li>• Can only be a listener of the same load balancer.</li></ul>                                                                                                                          |
| redirect_url         | No        | String  | <p>Specifies the URL to which traffic is redirected. The default value is <b>null</b>.</p> <p>This parameter is reserved.</p> <p>The value contains a maximum of 255 characters.</p>                                                                                                                                                                                                                                                                                                                                                                                                               |
| position             | No        | Integer | <p>Specifies the forwarding priority. The value ranges from <b>1</b> to <b>100</b>. The default value is <b>100</b>.</p> <p>This parameter is reserved.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                        |

| Parameter | Mandatory | Type  | Description                                                                                                                                                                                                            |
|-----------|-----------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rules     | No        | Array | <p>Lists the forwarding rules of the forwarding policy. For details, see <a href="#">Table 10-141</a>.</p> <p>The list contains a maximum of two rules, and the <b>type</b> parameter of each rule must be unique.</p> |

**Table 10-141** rules parameter description

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | <p>Specifies the administrative status of the forwarding rule.</p> <p>This parameter is reserved, and the default value is <b>true</b>.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| type           | Yes       | String  | <p>Specifies the match type of a forwarding rule.</p> <p>The value can be:</p> <ul style="list-style-type: none"><li>• <b>HOST_NAME</b>: matches the domain name in the request.</li><li>• <b>PATH</b>: matches the path in the request.</li></ul> <p>The match type of forwarding rules in a forwarding policy must be unique.</p>                                                                                                                                                                                                                                                   |
| compare_type   | Yes       | String  | <p>Specifies the match mode. The options are as follows:</p> <p>When <b>type</b> is set to <b>HOST_NAME</b>, the value of this parameter can only be the following:</p> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> <p>When <b>type</b> is set to <b>PATH</b>, the value of this parameter can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>REGEX</b>: indicates regular expression match.</li><li>• <b>STARTS_WITH</b>: indicates prefix match.</li><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> |

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| invert    | No        | Boolean | Specifies whether reverse matching is supported.<br>The value can be <b>true</b> or <b>false</b> . The default value is <b>false</b> .<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| key       | No        | String  | Specifies the key of the match content.<br>The default value is <b>null</b> .<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| value     | Yes       | String  | Specifies the value of the match content. The value cannot contain spaces. <ul style="list-style-type: none"><li>When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&amp;\$.*+? ,=!: \\V()[]{} </code></li></ul> |

## Response

**Table 10-142** Response parameters

| Parameter | Type   | Description                                                                      |
|-----------|--------|----------------------------------------------------------------------------------|
| l7policy  | Object | Specifies the forwarding policy. For details, see <a href="#">Table 10-143</a> . |

**Table 10-143** l7policy parameter description

| Parameter | Type   | Description                                                          |
|-----------|--------|----------------------------------------------------------------------|
| id        | String | Specifies the forwarding policy ID.                                  |
| tenant_id | String | Specifies the ID of the project where the forwarding policy is used. |

| Parameter            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| project_id           | String  | Specifies the ID of the project to which the forwarding policy belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                                                                                                |
| name                 | String  | Specifies the forwarding policy name.                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| admin_state_up       | Boolean | Specifies the administrative status of the forwarding policy.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                                                                              |
| description          | String  | Provides supplementary information about the forwarding policy.                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| listener_id          | String  | Specifies the ID of the listener to which the forwarding policy is added.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| action               | String  | Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener.<br>The value can be one of the following: <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL</b>: Requests are forwarded to the backend server group specified by <b>redirect_pool_id</b>.</li><li>• <b>REDIRECT_TO_LISTENER</b>: Requests are redirected from the HTTP listener specified by <b>listener_id</b> to the HTTPS listener specified by <b>redirect_listener_id</b>.</li></ul> |
| redirect_pool_id     | String  | Specifies the ID of the backend server group to which traffic is forwarded.                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| redirect_listener_id | String  | Specifies the ID of the listener to which the traffic is redirected.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| redirect_url         | String  | Specifies the URL to which traffic is redirected.<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| rules                | Array   | Lists the forwarding rules of the forwarding policy. For details, see <a href="#">Table 10-144</a> .                                                                                                                                                                                                                                                                                                                                                                                                             |
| position             | Integer | Specifies the forwarding priority. The value ranges from <b>1</b> to <b>100</b> . The default value is <b>100</b> .<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                               |

| Parameter           | Type   | Description                                                                                                                             |
|---------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | String | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the forwarding policy. |

**Table 10-144** rules parameter description

| Parameter | Type   | Description                                                     |
|-----------|--------|-----------------------------------------------------------------|
| id        | String | Lists the IDs of the forwarding rules in the forwarding policy. |

## Example Request

- Example request 1: Adding a forwarding policy  
POST https://{Endpoint}/v2.0/lbaas/l7policies

```
{
 "l7policy": {
 "name": "niubiao_yaqing_api-2",
 "listener_id": "3e24a3ca-11e5-4aa3-abd4-61ba0a8a18f1",
 "action": "REDIRECT_TO_POOL",
 "redirect_pool_id": "6460f13a-76de-43c7-b776-4fefc06a676e",
 "rules": [
 {
 "type": "PATH",
 "compare_type": "EQUAL_TO",
 "value": "/test"
 },
 {
 "type": "HOST_NAME",
 "compare_type": "EQUAL_TO",
 "value": "www.test.com"
 }
]
 }
}
```

## Example Response

- Example response 1

```
{
 "l7policy": {
 "redirect_pool_id": "6460f13a-76de-43c7-b776-4fefc06a676e",
 "description": "",
 "admin_state_up": true,
 "rules": [
 {
 "id": "742600d9-2a14-4808-af69-336883dbb590"
 },
 {
 "id": "3251ed77-0d52-412b-9310-733636bb3fbf"
 }
],
 "tenant_id": "573d73c9f90e48d0bddfa0eb202b25c2",
 "listener_id": "3e24a3ca-11e5-4aa3-abd4-61ba0a8a18f1",
 "redirect_url": null,
 }
}
```

```
{
 "redirect_listener_id": null,
 "action": "REDIRECT_TO_POOL",
 "position": 100,
 "provisioning_status": "ACTIVE",
 "project_id": "573d73c9f90e48d0bddfa0eb202b25c2",
 "id": "65d6e115-f179-4bcd-9bbb-1484e5f8ee81",
 "name": "niubiao_yaqing-api-2"
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.6.2 Querying Forwarding Policies

## Function

This API is used to query the forwarding policies. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

## Constraints

Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query. Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

## URI

GET /v2.0/lbaas/l7policies

## Request

**Table 10-145** Parameter description

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                |
|-----------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker    | No        | String  | Specifies the ID of the forwarding policy from which pagination query starts, that is, the ID of the last forwarding policy on the previous page. This parameter must be used together with <b>limit</b> . |
| limit     | No        | Integer | Specifies the number of forwarding policies on each page. If this parameter is not set, all forwarding policies are queried by default.                                                                    |



| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse   | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br>This parameter must be used together with <b>limit</b> . |
| id             | No        | String  | Specifies the forwarding policy ID.                                                                                                                                                                                                                                                                                                                                                                                           |
| tenant_id      | No        | String  | Specifies the ID of the project where the forwarding policy is used.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                       |
| project_id     | No        | String  | Specifies the ID of the project to which the forwarding policy belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                             |
| name           | No        | String  | Specifies the forwarding policy name.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                      |
| admin_state_up | No        | Boolean | Specifies the administrative status of the forwarding policy.<br>This parameter is reserved, and the default value is <b>true</b> .                                                                                                                                                                                                                                                                                           |
| description    | No        | String  | Provides supplementary information about the forwarding policy.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                            |
| listener_id    | No        | String  | Specifies the ID of the listener to which the forwarding policy is added.                                                                                                                                                                                                                                                                                                                                                     |

| Parameter            | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|----------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| action               | No        | String  | <p>Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL</b>: Requests are forwarded to the backend server group specified by <b>redirect_pool_id</b>.</li><li>• <b>REDIRECT_TO_LISTENER</b>: Requests are redirected from the HTTP listener specified by <b>listener_id</b> to the HTTPS listener specified by <b>redirect_listener_id</b>.</li></ul> |
| redirect_pool_id     | No        | String  | Specifies the ID of the backend server group to which traffic is forwarded.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| redirect_listener_id | No        | String  | Specifies the ID of the listener to which the traffic is redirected.                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| redirect_url         | No        | String  | <p>Specifies the URL to which traffic is redirected.</p> <p>This parameter is reserved.</p> <p>The value contains a maximum of 255 characters.</p>                                                                                                                                                                                                                                                                                                                                                                          |
| position             | No        | Integer | <p>Specifies the forwarding priority. The value ranges from <b>1</b> to <b>100</b>. The default value is <b>100</b>.</p> <p>This parameter is reserved.</p>                                                                                                                                                                                                                                                                                                                                                                 |
| provisioning_status  | No        | String  | <p>This parameter is reserved, and its value can only be <b>ACTIVE</b>.</p> <p>It specifies the provisioning status of the forwarding policy.</p>                                                                                                                                                                                                                                                                                                                                                                           |
| display_all_rules    | No        | Boolean | <p>Specifies whether to display all forwarding rules added to the forwarding policy.</p> <p>Value options:</p> <p><b>false</b>: Forwarding rules will not be displayed, and only IDs are displayed.</p> <p><b>true</b>: Forwarding rules will be displayed.</p>                                                                                                                                                                                                                                                             |

## Response

**Table 10-146** Response parameters

| Parameter        | Type  | Description                                                                                                                                                                                                   |
|------------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| l7policies       | Array | Lists the forwarding policies. For details, see <a href="#">Table 10-147</a> .                                                                                                                                |
| l7policies_links | Array | Provides links to the previous or next page during pagination query, respectively.<br>This parameter exists only in the response body of pagination query.<br>For details, see <a href="#">Table 10-149</a> . |

**Table 10-147** l7policy parameter description

| Parameter      | Type    | Description                                                                                                                                                                                                                                         |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the forwarding policy ID.                                                                                                                                                                                                                 |
| tenant_id      | String  | Specifies the ID of the project where the forwarding policy is used.                                                                                                                                                                                |
| project_id     | String  | Specifies the ID of the project to which the forwarding policy belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                   |
| name           | String  | Specifies the forwarding policy name.                                                                                                                                                                                                               |
| admin_state_up | Boolean | Specifies the administrative status of the forwarding policy.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>● <b>true</b>: Enabled</li><li>● <b>false</b>: Disabled</li></ul> |
| description    | String  | Provides supplementary information about the forwarding policy.                                                                                                                                                                                     |
| listener_id    | String  | Specifies the ID of the listener to which the forwarding policy is added.                                                                                                                                                                           |

| Parameter            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| action               | String  | Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener.<br>The value can be one of the following: <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL</b>: Requests are forwarded to the backend server group specified by <b>redirect_pool_id</b>.</li><li>• <b>REDIRECT_TO_LISTENER</b>: Requests are redirected from the HTTP listener specified by <b>listener_id</b> to the HTTPS listener specified by <b>redirect_listener_id</b>.</li></ul> |
| redirect_pool_id     | String  | Specifies the ID of the backend server group to which traffic is forwarded.                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| redirect_listener_id | String  | Specifies the ID of the listener to which the traffic is redirected.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| redirect_url         | String  | Specifies the URL to which traffic is redirected. This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| rules                | Array   | Lists the forwarding rules of the forwarding policy. For details, see <a href="#">Table 10-144</a> .                                                                                                                                                                                                                                                                                                                                                                                                             |
| position             | Integer | Specifies the forwarding priority. The value ranges from <b>1</b> to <b>100</b> . The default value is <b>100</b> .<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                               |
| provisioning_status  | String  | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the forwarding policy.                                                                                                                                                                                                                                                                                                                                                                          |

**Table 10-148 rules** parameter description

| Parameter | Type   | Description                                                     |
|-----------|--------|-----------------------------------------------------------------|
| id        | String | Lists the IDs of the forwarding rules in the forwarding policy. |

**Table 10-149 l7policies\_links** parameter description

| Parameter | Type   | Description                                                                        |
|-----------|--------|------------------------------------------------------------------------------------|
| href      | String | Provides links to the previous or next page during pagination query, respectively. |

| Parameter | Type   | Description                                                                                                                                                                                                                                                               |
|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rel       | String | Specifies the prompt of the previous or next page.<br><br>The value can be <b>next</b> or <b>previous</b> . The value <b>next</b> indicates the href containing the URL of the next page, and <b>previous</b> indicates the href containing the URL of the previous page. |

## Example Request

- Example request 1: Querying all forwarding policies  
GET https://{Endpoint}/v2.0/lbaas/l7policies
- Example request 2: Querying forwarding policies through which requests are forwarded to the backend server group  
GET https://{Endpoint}/v2.0/lbaas/l7policies?action=REDIRECT\_TO\_POOL

## Example Response

- Example response 1

```
{
 "l7policies": [
 {
 "redirect_pool_id": "431a03eb-81bb-408e-ae37-7ce19023692b",
 "redirect_listener_id": null,
 "description": "",
 "admin_state_up": true,
 "rules": [
 {
 "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
 },
 {
 "id": "f02b3bca-69d2-4335-a3fa-a8054e996213"
 }
],
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "listener_id": "26058b64-6185-4e06-874e-4bd68b7633d0",
 "redirect_url": null,
 "action": "REDIRECT_TO_POOL",
 "position": 2,
 "provisioning_status": "ACTIVE",
 "id": "5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586",
 "name": ""
 },
 {
 "redirect_pool_id": "59eebd7b-c68f-4f8a-aa7f-e062e84c0690",
 "redirect_listener_id": null,
 "description": "",
 "admin_state_up": true,
 "rules": [
 {
 "id": "f4499f48-de3d-4efe-926d-926aa4d6aaf5"
 }
],
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "listener_id": "e1310063-00de-4867-ab55-ccac4d9db364",
 "redirect_url": null,
 "action": "REDIRECT_TO_POOL",
```

```
 "position": 1,
 "provisioning_status": "ACTIVE",
 "id": "6cfd9d89-1d7e-4d84-ae1f-a8c5ff126f72",
 "name": ""
 }
],
"l7policies_links": [
 {
 "href": "https://{Endpoint}/v2.0/lbaas/l7policies/061f461c-c7cf-47ab-9583-09be5076cd09/rules?marker=167c1a31-bc12-4c3d-9ad1-c9bf450df4ce&page_reverse=True",
 "rel": "previous"
 }
]
}
```

- Example response 2

```
{
 "l7policies": [
 {
 "redirect_pool_id": "431a03eb-81bb-408e-ae37-7ce19023692b",
 "redirect_listener_id": null,
 "description": "",
 "admin_state_up": true,
 "rules": [
 {
 "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
 },
 {
 "id": "f02b3bca-69d2-4335-a3fa-a8054e996213"
 }
],
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "listener_id": "26058b64-6185-4e06-874e-4bd68b7633d0",
 "redirect_url": null,
 "action": "REDIRECT_TO_POOL",
 "position": 2,
 "provisioning_status": "ACTIVE",
 "id": "5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586",
 "name": ""
 },
 {
 "redirect_pool_id": "59eebd7b-c68f-4f8a-aa7f-e062e84c0690",
 "redirect_listener_id": null,
 "description": "",
 "admin_state_up": true,
 "rules": [
 {
 "id": "f4499f48-de3d-4efe-926d-926aa4d6aaf5"
 }
],
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "listener_id": "e1310063-00de-4867-ab55-ccac4d9db364",
 "redirect_url": null,
 "action": "REDIRECT_TO_POOL",
 "position": 1,
 "provisioning_status": "ACTIVE",
 "id": "6cfd9d89-1d7e-4d84-ae1f-a8c5ff126f72",
 "name": ""
 }
],
 "l7policies_links": [
 {
 "href": "https://{Endpoint}/v2.0/lbaas/l7policies/061f461c-c7cf-47ab-9583-09be5076cd09/rules?marker=167c1a31-bc12-4c3d-9ad1-c9bf450df4ce&page_reverse=True",
 "rel": "previous"
 }
]
}
```

### Status Code

For details, see [Status Codes](#).

### 10.1.6.3 Querying Details of a Forwarding Policy

#### Function

This API is used to query details about a forwarding policy.

#### URI

GET /v2.0/lbaas/l7policies/{l7policy\_id}

Table 10-150 Parameter description

| Parameter   | Mandatory | Type   | Description                         |
|-------------|-----------|--------|-------------------------------------|
| l7policy_id | Yes       | String | Specifies the forwarding policy ID. |

#### Request

None

#### Response

Table 10-151 Parameter description

| Parameter | Type   | Description                                                                      |
|-----------|--------|----------------------------------------------------------------------------------|
| l7policy  | Object | Specifies the forwarding policy. For details, see <a href="#">Table 10-152</a> . |

Table 10-152 l7policy parameter description

| Parameter  | Type   | Description                                                                                                                       |
|------------|--------|-----------------------------------------------------------------------------------------------------------------------------------|
| id         | String | Specifies the forwarding policy ID.                                                                                               |
| tenant_id  | String | Specifies the ID of the project where the forwarding policy is used.                                                              |
| project_id | String | Specifies the ID of the project to which the forwarding policy belongs. This parameter has the same meaning as <b>tenant_id</b> . |
| name       | String | Specifies the forwarding policy name.                                                                                             |

| Parameter            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up       | Boolean | Specifies the administrative status of the forwarding policy.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                                                                              |
| description          | String  | Provides supplementary information about the forwarding policy.                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| listener_id          | String  | Specifies the ID of the listener to which the forwarding policy is added.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| action               | String  | Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener.<br>The value can be one of the following: <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL</b>: Requests are forwarded to the backend server group specified by <b>redirect_pool_id</b>.</li><li>• <b>REDIRECT_TO_LISTENER</b>: Requests are redirected from the HTTP listener specified by <b>listener_id</b> to the HTTPS listener specified by <b>redirect_listener_id</b>.</li></ul> |
| redirect_pool_id     | String  | Specifies the ID of the backend server group to which traffic is forwarded.                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| redirect_listener_id | String  | Specifies the ID of the listener to which the traffic is redirected.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| redirect_url         | String  | Specifies the URL to which traffic is redirected.<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| rules                | Array   | Lists the forwarding rules of the forwarding policy. For details, see <a href="#">Table 10-144</a> .                                                                                                                                                                                                                                                                                                                                                                                                             |
| position             | Integer | Specifies the forwarding priority. The value ranges from <b>1</b> to <b>100</b> . The default value is <b>100</b> .<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                               |
| provisioning_status  | String  | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the forwarding policy.                                                                                                                                                                                                                                                                                                                                                                          |



**Table 10-153** rules parameter description

| Parameter | Type   | Description                                                     |
|-----------|--------|-----------------------------------------------------------------|
| id        | String | Lists the IDs of the forwarding rules in the forwarding policy. |

## Example Request

- Example request: Querying details of a forwarding policy  
GET https://{Endpoint}/v2.0/lbaas/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586

## Example Response

- Example response

```
{
 "l7policy": {
 "redirect_pool_id": "431a03eb-81bb-408e-ae37-7ce19023692b",
 "redirect_listener_id": null,
 "description": "",
 "admin_state_up": true,
 "rules": [
 {
 "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
 },
 {
 "id": "f02b3bca-69d2-4335-a3fa-a8054e996213"
 }
],
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "listener_id": "26058b64-6185-4e06-874e-4bd68b7633d0",
 "redirect_url": null,
 "provisioning_status": "ACTIVE",
 "action": "REDIRECT_TO_POOL",
 "position": 1,
 "id": "5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586",
 "name": "l7policy-garry-1"
 }
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.6.4 Updating a Forwarding Policy

## Function

This API is used to update a forwarding policy. You can select another backend server group or redirect to another HTTPS listener.

## URI

PUT /v2.0/lbaas/l7policies/{l7policy\_id}

**Table 10-154** Parameter description

| Parameter   | Mandatory | Type   | Description                         |
|-------------|-----------|--------|-------------------------------------|
| l7policy_id | Yes       | Object | Specifies the forwarding policy ID. |

## Request

**Table 10-155** Parameter description

| Parameter | Mandatory | Type   | Description                                                                      |
|-----------|-----------|--------|----------------------------------------------------------------------------------|
| l7policy  | Yes       | Object | Specifies the forwarding policy. For details, see <a href="#">Table 10-156</a> . |

**Table 10-156** l7policy parameter description

| Parameter        | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| name             | No        | String | Specifies the forwarding policy name. The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| description      | No        | String | Provides supplementary information about the forwarding policy. The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| redirect_pool_id | No        | String | <p>Specifies the ID of the backend server group to which traffic is forwarded. The default value is <b>null</b>.</p> <p>This parameter is mandatory when <b>action</b> is set to <b>REDIRECT_TO_POOL</b>.</p> <p>This parameter cannot be specified when <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>.</p> <p>The backend server group must meet the following requirements:</p> <ul style="list-style-type: none"><li>• Cannot be the default backend server group of the listener.</li><li>• Cannot be the backend server group used by forwarding policies of other listeners.</li></ul> |

| Parameter            | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|----------------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| redirect_listener_id | No        | String  | <p>Specifies the ID of the listener to which the traffic is redirected. The default value is <b>null</b>.</p> <p>This parameter is mandatory when <b>action</b> is set to <b>REDIRECT_TO_LISTENER</b>.</p> <p>This parameter cannot be specified when <b>action</b> is set to <b>REDIRECT_TO_POOL</b>. The listener must meet the following requirements:</p> <ul style="list-style-type: none"><li>• Can only be an HTTPS listener.</li><li>• Can only be a listener of the same load balancer.</li></ul> |
| admin_state_up       | No        | Boolean | <p>Specifies the administrative status of the forwarding policy.</p> <p>This parameter is reserved, and the default value is <b>true</b>.</p>                                                                                                                                                                                                                                                                                                                                                              |

## Response

**Table 10-157** Response parameters

| Parameter | Mandatory | Type   | Description                                                                      |
|-----------|-----------|--------|----------------------------------------------------------------------------------|
| l7policy  | Yes       | Object | Specifies the forwarding policy. For details, see <a href="#">Table 10-158</a> . |

**Table 10-158** l7policy parameter description

| Parameter  | Type   | Description                                                                                                                       |
|------------|--------|-----------------------------------------------------------------------------------------------------------------------------------|
| id         | String | Specifies the forwarding policy ID.                                                                                               |
| tenant_id  | String | Specifies the ID of the project where the forwarding policy is used.                                                              |
| project_id | String | Specifies the ID of the project to which the forwarding policy belongs. This parameter has the same meaning as <b>tenant_id</b> . |
| name       | String | Specifies the forwarding policy name.                                                                                             |

| Parameter            | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up       | Boolean | Specifies the administrative status of the forwarding policy.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                                                                              |
| description          | String  | Provides supplementary information about the forwarding policy.                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| listener_id          | String  | Specifies the ID of the listener to which the forwarding policy is added.                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| action               | String  | Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener.<br>The value can be one of the following: <ul style="list-style-type: none"><li>• <b>REDIRECT_TO_POOL</b>: Requests are forwarded to the backend server group specified by <b>redirect_pool_id</b>.</li><li>• <b>REDIRECT_TO_LISTENER</b>: Requests are redirected from the HTTP listener specified by <b>listener_id</b> to the HTTPS listener specified by <b>redirect_listener_id</b>.</li></ul> |
| redirect_pool_id     | String  | Specifies the ID of the backend server group to which traffic is forwarded.                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| redirect_listener_id | String  | Specifies the ID of the listener to which the traffic is redirected.                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| redirect_url         | String  | Specifies the URL to which traffic is redirected.<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| rules                | Array   | Lists the forwarding rules of the forwarding policy. For details, see <a href="#">Table 10-144</a> .                                                                                                                                                                                                                                                                                                                                                                                                             |
| position             | Integer | Specifies the forwarding priority. The value ranges from <b>1</b> to <b>100</b> . The default value is <b>100</b> .<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                               |
| provisioning_status  | String  | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the forwarding policy.                                                                                                                                                                                                                                                                                                                                                                          |

**Table 10-159** rules parameter description

| Parameter | Type   | Description                                                     |
|-----------|--------|-----------------------------------------------------------------|
| id        | String | Lists the IDs of the forwarding rules in the forwarding policy. |

## Example Request

- Example request: Updating a forwarding policy  
PUT https://{Endpoint}/v2.0/lbaas/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586  

```
{
 "l7policy": {
 "name": "test"
 }
}
```

## Example Response

- Example response  

```
{
 "l7policy": {
 "redirect_pool_id": "431a03eb-81bb-408e-ae37-7ce19023692b",
 "redirect_listener_id": null,
 "description": "",
 "admin_state_up": true,
 "rules": [
 {
 "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
 },
 {
 "id": "f02b3bca-69d2-4335-a3fa-a8054e996213"
 }
],
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "listener_id": "26058b64-6185-4e06-874e-4bd68b7633d0",
 "redirect_url": null,
 "action": "REDIRECT_TO_POOL",
 "provisioning_status": "ACTIVE",
 "position": 2,
 "id": "5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586",
 "name": "test"
 }
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.6.5 Deleting a Forwarding Policy

## Function

This API is used to delete a specific forwarding policy.

## URI

DELETE /v2.0/lbaas/l7policies/{l7policy\_id}

**Table 10-160** Parameter description

| Parameter   | Mandatory | Type   | Description                         |
|-------------|-----------|--------|-------------------------------------|
| l7policy_id | Yes       | Object | Specifies the forwarding policy ID. |

## Request

None

## Response

None

## Example Request

- Example request: Deleting a forwarding policy  
DELETE https://{Endpoint}/v2.0/lbaas/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586

## Example Response

- Example response  
None

## Status Code

For details, see [Status Codes](#).

## 10.1.7 Forwarding Rule

### 10.1.7.1 Adding a Forwarding Rule

## Function

This API is used to add a forwarding rule. After you add a forwarding rule, the load balancer matches the domain name and path in the request and distributes the traffic to the backend server group specified by **redirect\_pool\_id** of the associated forwarding policy.

## Constraints

The match type of forwarding rules in a forwarding policy must be unique.

## URI

POST /v2.0/lbaas/l7policies/{l7policy\_id}/rules

**Table 10-161** Parameter description

| Parameter   | Mandatory | Type   | Description                         |
|-------------|-----------|--------|-------------------------------------|
| l7policy_id | Yes       | String | Specifies the forwarding policy ID. |

## Request

**Table 10-162** Parameter description

| Parameter | Mandatory | Type   | Description                                                                    |
|-----------|-----------|--------|--------------------------------------------------------------------------------|
| rule      | Yes       | Object | Specifies the forwarding rule. For details, see <a href="#">Table 10-163</a> . |

**Table 10-163** rule parameter description

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                       |
|----------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id      | No        | String  | Specifies the ID of the project where the forwarding rule is used.<br><br>The value must be the same as the value of <b>project_id</b> in the token.<br><br>The value contains a maximum of 255 characters.       |
| project_id     | No        | String  | Specifies the ID of the project to which the forwarding rule belongs. This parameter has the same meaning as <b>tenant_id</b> .<br><br>The value must be the same as the value of <b>project_id</b> in the token. |
| admin_state_up | No        | Boolean | Specifies the administrative status of the forwarding rule.<br><br>This parameter is reserved, and the default value is <b>true</b> .                                                                             |

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type         | Yes       | String  | <p>Specifies the match type of a forwarding rule.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>HOST_NAME</b>: matches the domain name in the request.</li><li>• <b>PATH</b>: matches the path in the request.</li></ul> <p>The match type of forwarding rules in a forwarding policy must be unique.</p>                                                                                                                                                                                                                              |
| compare_type | Yes       | String  | <p>Specifies the match mode. The options are as follows:</p> <p>When <b>type</b> is set to <b>HOST_NAME</b>, the value of this parameter can only be the following:</p> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> <p>When <b>type</b> is set to <b>PATH</b>, the value of this parameter can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>REGEX</b>: indicates regular expression match.</li><li>• <b>STARTS_WITH</b>: indicates prefix match.</li><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> |
| invert       | No        | Boolean | <p>Specifies whether reverse matching is supported.</p> <p>The value can be <b>true</b> or <b>false</b>. The default value is <b>false</b>.</p> <p>This parameter is reserved.</p>                                                                                                                                                                                                                                                                                                                                                                                                    |
| key          | No        | String  | <p>Specifies the key of the match content. The default value is <b>null</b>.</p> <p>This parameter is reserved.</p> <p>The value contains a maximum of 255 characters.</p>                                                                                                                                                                                                                                                                                                                                                                                                            |



| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value     | Yes       | String | <p>Specifies the value of the match content. The value cannot contain spaces.</p> <p>The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"><li>When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&amp;\$. *+?,=!:  \() [] {}</code></li></ul> |

## Response

**Table 10-164** Response parameters

| Parameter | Type   | Description                                                                    |
|-----------|--------|--------------------------------------------------------------------------------|
| rule      | Object | Specifies the forwarding rule. For details, see <a href="#">Table 10-165</a> . |

**Table 10-165** rule parameter description

| Parameter  | Type   | Description                                                                                                                      |
|------------|--------|----------------------------------------------------------------------------------------------------------------------------------|
| id         | String | Specifies the forwarding rule ID.                                                                                                |
| tenant_id  | String | <p>Specifies the ID of the project where the forwarding rule is used.</p> <p>The value contains a maximum of 255 characters.</p> |
| project_id | String | Specifies the ID of the project to which the forwarding rule belongs. This parameter has the same meaning as <b>tenant_id</b> .  |

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | Boolean | <p>Specifies the administrative status of the forwarding rule.</p> <p>This parameter is reserved. The value can be <b>true</b> or <b>false</b>.</p> <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                                                                                                                                           |
| type           | String  | <p>Specifies the match type of a forwarding rule.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>HOST_NAME</b>: matches the domain name in the request.</li><li>• <b>PATH</b>: matches the path in the request.</li></ul>                                                                                                                                                                                                                                                                                                               |
| compare_type   | String  | <p>Specifies the match mode. The options are as follows:</p> <p>When <b>type</b> is set to <b>HOST_NAME</b>, the value of this parameter can only be the following:</p> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> <p>When <b>type</b> is set to <b>PATH</b>, the value of this parameter can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>REGEX</b>: indicates regular expression match.</li><li>• <b>STARTS_WITH</b>: indicates prefix match.</li><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> |
| invert         | Boolean | <p>Specifies whether reverse matching is supported.</p> <p>The value can be <b>true</b> or <b>false</b>. The default value is <b>false</b>.</p> <p>This parameter is reserved.</p>                                                                                                                                                                                                                                                                                                                                                                                                    |
| key            | String  | <p>Specifies the key of the match content. The default value is <b>null</b>.</p> <p>This parameter is reserved.</p> <p>The value contains a maximum of 255 characters.</p>                                                                                                                                                                                                                                                                                                                                                                                                            |

| Parameter           | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value               | String | <p>Specifies the value of the match content.</p> <p>The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"><li>When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&amp;\$.*+?,=!:  \()[]{}</code></li></ul> |
| provisioning_status | String | <p>This parameter is reserved, and its value can only be <b>ACTIVE</b>.</p> <p>It specifies the provisioning status of the forwarding rule.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## Example Request

- Example request: Adding a forwarding rule  
POST https://{Endpoint}/v2.0/lbaas/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules  

```
{
 "rule": {
 "compare_type": "EQUAL_TO",
 "type": "PATH",
 "value": "/bbb.html"
 }
}
```

## Example Response

- Example response  

```
{
 "rule": {
 "compare_type": "EQUAL_TO",
 "admin_state_up": true,
 "provisioning_status": "ACTIVE",
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "invert": false,
 "value": "/bbb.html",
 "key": null,
 "type": "PATH",
 "id": "c6f457b8-bf6f-45d7-be5c-a3226945b7b1"
 }
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.7.2 Querying Forwarding Rules

#### Function

This API is used to query forwarding rules. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

#### Constraints

Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query. Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

#### URI

GET /v2.0/lbaas/l7policies/{l7policy\_id}/rules

**Table 10-166** Parameter description

| Parameter   | Mandatory | Type   | Description                         |
|-------------|-----------|--------|-------------------------------------|
| l7policy_id | Yes       | String | Specifies the forwarding policy ID. |

#### Request

**Table 10-167** Parameter description

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                                   |
|-----------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker    | No        | String  | Specifies the ID of the forwarding rule from which pagination query starts, that is, the ID of the last forwarding rule on the previous page.<br><br>This parameter must be used together with <b>limit</b> . |
| limit     | No        | Integer | Specifies the number of forwarding rules on each page. If this parameter is not set, all forwarding rules are queried by default.                                                                             |

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                       |
|----------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse   | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br><br>This parameter must be used together with <b>limit</b> . |
| id             | No        | String  | Specifies the forwarding rule ID.                                                                                                                                                                                                                                                                                                                                                                                                 |
| tenant_id      | No        | String  | Specifies the ID of the project where the forwarding rule is used.<br><br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                         |
| project_id     | No        | String  | Specifies the ID of the project to which the forwarding rule belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                   |
| admin_state_up | No        | Boolean | Specifies the administrative status of the forwarding rule.<br><br>This parameter is reserved, and the default value is <b>true</b> .                                                                                                                                                                                                                                                                                             |
| type           | No        | String  | Specifies the match type of a forwarding rule.<br><br>The value can be one of the following: <ul style="list-style-type: none"><li>• <b>HOST_NAME</b>: matches the domain name in the request.</li><li>• <b>PATH</b>: matches the path in the request.</li></ul><br>The match type of forwarding rules in a forwarding policy must be unique.                                                                                     |

| Parameter    | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| compare_type | No        | String  | <p>Specifies the match mode. The options are as follows:</p> <p>When <b>type</b> is set to <b>HOST_NAME</b>, the value of this parameter can only be the following:</p> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> <p>When <b>type</b> is set to <b>PATH</b>, the value of this parameter can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>REGEX</b>: indicates regular expression match.</li><li>• <b>STARTS_WITH</b>: indicates prefix match.</li><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul>                                                                                                                |
| invert       | No        | Boolean | <p>Specifies whether reverse matching is supported.</p> <p>The value can be <b>true</b> or <b>false</b>. The default value is <b>false</b>.</p> <p>This parameter is reserved.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| key          | No        | String  | <p>Specifies the key of the match content. The default value is <b>null</b>.</p> <p>This parameter is reserved.</p> <p>The value contains a maximum of 255 characters.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| value        | No        | String  | <p>Specifies the value of the match content.</p> <p>The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"><li>• When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>• When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~' ;@^-%#&amp;\$.*+?,=!:  \() [] {}</code></li></ul> |

| Parameter           | Mandatory | Type   | Description                                                                                                                           |
|---------------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | No        | String | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the forwarding rule. |

## Response

**Table 10-168** Response parameters

| Parameter   | Type  | Description                                                                                                                                                                                                   |
|-------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| rules       | Array | Lists the forwarding rules. For details, see <a href="#">Table 10-169</a> .                                                                                                                                   |
| rules_links | Array | Provides links to the previous or next page during pagination query, respectively.<br>This parameter exists only in the response body of pagination query.<br>For details, see <a href="#">Table 10-170</a> . |

**Table 10-169** rules parameter description

| Parameter      | Type    | Description                                                                                                                                                                                                                                       |
|----------------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the forwarding rule ID.                                                                                                                                                                                                                 |
| tenant_id      | String  | Specifies the ID of the project where the forwarding rule is used.<br>The value contains a maximum of 255 characters.                                                                                                                             |
| project_id     | String  | Specifies the ID of the project to which the forwarding rule belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                   |
| admin_state_up | Boolean | Specifies the administrative status of the forwarding rule.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul> |

| Parameter    | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|--------------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type         | String  | <p>Specifies the match type of a forwarding rule. The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>HOST_NAME</b>: matches the domain name in the request.</li><li>• <b>PATH</b>: matches the path in the request.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                               |
| compare_type | String  | <p>Specifies the match mode. The options are as follows:</p> <p>When <b>type</b> is set to <b>HOST_NAME</b>, the value of this parameter can only be the following:</p> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> <p>When <b>type</b> is set to <b>PATH</b>, the value of this parameter can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>REGEX</b>: indicates regular expression match.</li><li>• <b>STARTS_WITH</b>: indicates prefix match.</li><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul>                                                                                                          |
| invert       | Boolean | <p>Specifies whether reverse matching is supported.</p> <p>The value can be <b>true</b> or <b>false</b>. The default value is <b>false</b>.</p> <p>This parameter is reserved.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| key          | String  | <p>Specifies the key of the match content. The default value is <b>null</b>.</p> <p>This parameter is reserved.</p> <p>The value contains a maximum of 255 characters.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| value        | String  | <p>Specifies the value of the match content. The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"><li>• When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>• When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&amp;\$. *+? ,=!:  \() [] {}</code></li></ul> |



| Parameter           | Type   | Description                                                                                                                           |
|---------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------|
| provisioning_status | String | This parameter is reserved, and its value can only be <b>ACTIVE</b> .<br>It specifies the provisioning status of the forwarding rule. |

**Table 10-170** rules\_links parameter description

| Parameter | Type   | Description                                                                                                                                                                                                                                                           |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| href      | String | Provides links to the previous or next page during pagination query, respectively.                                                                                                                                                                                    |
| rel       | String | Specifies the prompt of the previous or next page.<br>The value can be <b>next</b> or <b>previous</b> . The value <b>next</b> indicates the href containing the URL of the next page, and <b>previous</b> indicates the href containing the URL of the previous page. |

## Example Request

- Example request: Querying all forwarding rules of a specific forwarding policy  
GET https://{Endpoint}/v2.0/lbaas/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules

## Example Response

- Example response

```
{
 "rules": [
 {
 "compare_type": "EQUAL_TO",
 "provisioning_status": "ACTIVE",
 "admin_state_up": true,
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "invert": false,
 "value": "www.test.com",
 "key": null,
 "type": "HOST_NAME",
 "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
 },
 {
 "compare_type": "EQUAL_TO",
 "provisioning_status": "ACTIVE",
 "admin_state_up": true,
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "invert": false,
 "value": "/aaa.html",
 "key": null,
 "type": "PATH",
 "id": "f02b3bca-69d2-4335-a3fa-a8054e996213"
 }
]
 "rules_links": [
```

```
{
 "href": "https://{Endpoint}/v2.0/lbaas/l7policies/061f461c-c7cf-47ab-9583-09be5076cd09/rules?marker=167c1a31-bc12-4c3d-9ad1-c9bf450df4ce&page_reverse=True",
 "rel": "previous"
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.7.3 Querying Details of a Forwarding Rule

## Function

This API is used to query details about a forwarding rule by ID.

## URI

GET /v2.0/lbaas/l7policies/{l7policy\_id}/rules/{l7rule\_id}

**Table 10-171** Parameter description

| Parameter   | Mandatory | Type   | Description                         |
|-------------|-----------|--------|-------------------------------------|
| l7policy_id | Yes       | String | Specifies the forwarding policy ID. |
| l7rule_id   | Yes       | String | Specifies the forwarding rule ID.   |

## Request

None

## Response

**Table 10-172** Response parameters

| Parameter | Type   | Description                                                                    |
|-----------|--------|--------------------------------------------------------------------------------|
| rule      | Object | Specifies the forwarding rule. For details, see <a href="#">Table 10-173</a> . |

**Table 10-173** rule parameter description

| Parameter | Type   | Description                       |
|-----------|--------|-----------------------------------|
| id        | String | Specifies the forwarding rule ID. |

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id      | String  | Specifies the ID of the project where the forwarding rule is used.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| project_id     | String  | Specifies the ID of the project to which the forwarding rule belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| admin_state_up | Boolean | Specifies the administrative status of the forwarding rule.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                                                                                                                                     |
| type           | String  | Specifies the match type of a forwarding rule.<br>The value can be one of the following: <ul style="list-style-type: none"><li>• <b>HOST_NAME</b>: matches the domain name in the request.</li><li>• <b>PATH</b>: matches the path in the request.</li></ul>                                                                                                                                                                                                                                                                                                          |
| compare_type   | String  | Specifies the match mode. The options are as follows:<br>When <b>type</b> is set to <b>HOST_NAME</b> , the value of this parameter can only be the following: <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> When <b>type</b> is set to <b>PATH</b> , the value of this parameter can be one of the following: <ul style="list-style-type: none"><li>• <b>REGEX</b>: indicates regular expression match.</li><li>• <b>STARTS_WITH</b>: indicates prefix match.</li><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> |
| invert         | Boolean | Specifies whether reverse matching is supported.<br>The value can be <b>true</b> or <b>false</b> . The default value is <b>false</b> .<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                 |
| key            | String  | Specifies the key of the match content. The default value is <b>null</b> .<br>This parameter is reserved.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                          |

| Parameter           | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value               | String | <p>Specifies the value of the match content. The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"><li>When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&amp;\$.*+?,=!:  \()[]{}</code></li></ul> |
| provisioning_status | String | <p>This parameter is reserved, and its value can only be <b>ACTIVE</b>.</p> <p>It specifies the provisioning status of the forwarding rule.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## Example Request

- Example request: Querying details of a forwarding rule  
GET <https://{Endpoint}/v2.0/lbaas/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules/67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3>

## Example Response

- Example response

```
{
 "rule": {
 "compare_type": "EQUAL_TO",
 "provisioning_status": "ACTIVE",
 "admin_state_up": true,
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "invert": false,
 "value": "/index.html",
 "key": null,
 "type": "PATH",
 "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
 }
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.7.4 Updating a Forwarding Rule

#### Function

This API is used to update a forwarding rule. You can change the mode that how traffic is distributed by updating the forwarding rule.

#### URI

PUT /v2.0/lbaas/l7policies/{l7policy\_id}/rules/{l7rule\_id}

**Table 10-174** Parameter description

| Parameter   | Mandatory | Type   | Description                         |
|-------------|-----------|--------|-------------------------------------|
| l7policy_id | Yes       | String | Specifies the forwarding policy ID. |
| l7rule_id   | Yes       | String | Specifies the forwarding rule ID.   |

#### Request

**Table 10-175** Parameter description

| Parameter | Mandatory | Type   | Description                                                                    |
|-----------|-----------|--------|--------------------------------------------------------------------------------|
| rule      | Yes       | Object | Specifies the forwarding rule. For details, see <a href="#">Table 10-176</a> . |

**Table 10-176** rule parameter description

| Parameter    | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|--------------|-----------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| compare_type | No        | String | <p>Specifies the match mode. The options are as follows:</p> <p>When <b>type</b> is set to <b>HOST_NAME</b>, the value of this parameter can only be the following:</p> <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> <p>When <b>type</b> is set to <b>PATH</b>, the value of this parameter can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>REGEX</b>: indicates regular expression match.</li><li>• <b>STARTS_WITH</b>: indicates prefix match.</li><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> |

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|----------------|-----------|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | Specifies the administrative status of the forwarding rule.<br>This parameter is reserved, and the default value is <b>true</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| invert         | No        | Boolean | Specifies whether reverse matching is supported.<br>The value can be <b>true</b> or <b>false</b> . The default value is <b>false</b> .<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| key            | No        | String  | Specifies the key of the match content.<br>The default value is <b>null</b> .<br>This parameter is reserved.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| value          | No        | String  | Specifies the value of the match content.<br>The value cannot contain spaces.<br>The value contains a maximum of 128 characters. <ul style="list-style-type: none"><li>When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&amp;\$.*+?;=!:  \()[]{}</code></li></ul> |

## Response

**Table 10-177** Response parameters

| Parameter | Type   | Description                                                                    |
|-----------|--------|--------------------------------------------------------------------------------|
| rule      | Object | Specifies the forwarding rule. For details, see <a href="#">Table 10-178</a> . |

**Table 10-178** rule parameter description

| Parameter      | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the forwarding rule ID.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| tenant_id      | String  | Specifies the ID of the project where the forwarding rule is used.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| project_id     | String  | Specifies the ID of the project to which the forwarding rule belongs. This parameter has the same meaning as <b>tenant_id</b> .                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| admin_state_up | Boolean | Specifies the administrative status of the forwarding rule.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul>                                                                                                                                                                                                                                                                                                                     |
| type           | String  | Specifies the match type of a forwarding rule.<br>The value can be one of the following: <ul style="list-style-type: none"><li>• <b>HOST_NAME</b>: matches the domain name in the request.</li><li>• <b>PATH</b>: matches the path in the request.</li></ul>                                                                                                                                                                                                                                                                                                          |
| compare_type   | String  | Specifies the match mode. The options are as follows:<br>When <b>type</b> is set to <b>HOST_NAME</b> , the value of this parameter can only be the following: <ul style="list-style-type: none"><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> When <b>type</b> is set to <b>PATH</b> , the value of this parameter can be one of the following: <ul style="list-style-type: none"><li>• <b>REGEX</b>: indicates regular expression match.</li><li>• <b>STARTS_WITH</b>: indicates prefix match.</li><li>• <b>EQUAL_TO</b>: indicates exact match.</li></ul> |
| invert         | Boolean | Specifies whether reverse matching is supported.<br>The value can be <b>true</b> or <b>false</b> . The default value is <b>false</b> .<br>This parameter is reserved.                                                                                                                                                                                                                                                                                                                                                                                                 |
| key            | String  | Specifies the key of the match content. The default value is <b>null</b> .<br>This parameter is reserved.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                                                                                          |

| Parameter           | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------------------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| value               | String | <p>Specifies the value of the match content. The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"><li>When <b>type</b> is set to <b>HOST_NAME</b>, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</li><li>When <b>type</b> is set to <b>PATH</b>, the value can contain a maximum of 128 characters. When <b>compare_type</b> is set to <b>STARTS_WITH</b> or <b>EQUAL_TO</b>, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&amp;\$.*+?,=!:  \()[]{}</code></li></ul> |
| provisioning_status | String | <p>This parameter is reserved, and its value can only be <b>ACTIVE</b>.</p> <p>It specifies the provisioning status of the forwarding rule.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

## Example Request

- Example request: Updating a forwarding rule  
PUT https://{Endpoint}/v2.0/lbaas/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules/c6f457b8-bf6f-45d7-be5c-a3226945b7b1  

```
{
 "rule": {
 "compare_type": "STARTS_WITH",
 "value": "/ccc.html"
 }
}
```

## Example Response

- Example response  

```
{
 "rule": {
 "compare_type": "STARTS_WITH",
 "provisioning_status": "ACTIVE",
 "admin_state_up": true,
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "project_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "invert": false,
 "value": "/ccc.html",
 "key": null,
 "type": "PATH",
 "id": "c6f457b8-bf6f-45d7-be5c-a3226945b7b1"
 }
}
```

## Status Code

For details, see [Status Codes](#).



### 10.1.7.5 Deleting a Forwarding Rule

#### Function

This API is used to delete a specific forwarding rule.

#### URI

DELETE /v2.0/lbaas/l7policies/{l7policy\_id}/rules/{l7rule\_id}

**Table 10-179** Parameter description

| Parameter   | Mandatory | Type   | Description                         |
|-------------|-----------|--------|-------------------------------------|
| l7policy_id | Yes       | String | Specifies the forwarding policy ID. |
| l7rule_id   | Yes       | String | Specifies the forwarding rule ID.   |

#### Request

None

#### Response

None

#### Example Request

- Example request: Deleting a forwarding rule  
DELETE https://{Endpoint}/v2.0/lbaas/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules/c6f457b8-bf6f-45d7-be5c-a3226945b7b1

#### Example Response

- Example response  
None

#### Status Code

For details, see [Status Codes](#).

## 10.1.8 Whitelist

### 10.1.8.1 Adding a Whitelist

#### Function

This API is used to add a whitelist to control access to a specific listener. After a whitelist is added, only IP addresses in the whitelist can access the listener.

## URI

POST /v2.0/lbaas/whitelists

## Request

**Table 10-180** Parameter description

| Parameter | Mandatory | Type   | Description                                                              |
|-----------|-----------|--------|--------------------------------------------------------------------------|
| whitelist | Yes       | Object | Specifies the whitelist. For details, see <a href="#">Table 10-181</a> . |

**Table 10-181** whitelist parameter description

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                 |
|------------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id        | No        | String  | Specifies the ID of the project where the whitelist is used.<br><br>The value must be the same as the value of <b>project_id</b> in the token.<br>The value contains a maximum of 255 characters.                                                                                           |
| listener_id      | Yes       | String  | Specifies the listener ID.<br>Only one whitelist can be created for a listener.                                                                                                                                                                                                             |
| enable_whitelist | No        | Boolean | Specifies whether to enable access control.<br><b>true</b> : Access control is enabled.<br><b>false</b> : Access control is disabled.<br>The default value is <b>true</b> .                                                                                                                 |
| whitelist        | No        | String  | Specifies the IP addresses in the whitelist. Use commas (,) to separate multiple IP addresses.<br>You can specify an IP address, for example, 192.168.11.1.<br>You can also specify an IP address range, for example, 192.168.0.1/24.<br>The default value is an empty string, that is, "". |

## Response

**Table 10-182** Response parameters

| Parameter | Type   | Description                                                              |
|-----------|--------|--------------------------------------------------------------------------|
| whitelist | Object | Specifies the whitelist. For details, see <a href="#">Table 10-183</a> . |

**Table 10-183** whitelist parameter description

| Parameter        | Type    | Description                                                                                                                           |
|------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------|
| id               | String  | Specifies the whitelist ID.                                                                                                           |
| tenant_id        | String  | Specifies the ID of the project where the whitelist is used.<br>The value contains a maximum of 255 characters.                       |
| listener_id      | String  | Specifies the ID of the listener to which the whitelist is added.                                                                     |
| enable_whitelist | Boolean | Specifies whether to enable access control.<br><b>true</b> : Access control is enabled.<br><b>false</b> : Access control is disabled. |
| whitelist        | String  | Specifies the IP addresses in the whitelist.                                                                                          |

## Example Request

- Example request: Adding a whitelist

POST https://{Endpoint}/v2.0/lbaas/whitelists

```
{
 "whitelist": {
 "listener_id": "eabfefa3fd1740a88a47ad98e132d238",
 "enable_whitelist": true,
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
 }
}
```

## Example Response

- Example response

```
{
 "whitelist": {
 "id": "eabfefa3fd1740a88a47ad98e132d238",
 "listener_id": "eabfefa3fd1740a88a47ad98e132d238",
 "tenant_id": "eabfefa3fd1740a88a47ad98e132d238",
 "enable_whitelist": true,
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
 }
}
```

```
}
}
```

### Status Code

For details, see [Status Codes](#).

### 10.1.8.2 Querying Whitelists

#### Function

This API is used to query the whitelists. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

#### Constraints

Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query. Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

#### URI

GET /v2.0/lbaas/whitelists

#### Request

Table 10-184 Parameter description

| Parameter | Mandatory | Type    | Description                                                                                                                                                                                       |
|-----------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker    | No        | String  | Specifies the ID of the whitelist from which pagination query starts, that is, the ID of the last whitelist on the previous page.<br><br>This parameter must be used together with <b>limit</b> . |
| limit     | No        | Integer | Specifies the number of whitelists on each page. If this parameter is not set, all whitelists are queried by default.                                                                             |

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| page_reverse     | No        | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link.<br>This parameter must be used together with <b>limit</b> . |
| id               | No        | String  | Specifies the whitelist ID.                                                                                                                                                                                                                                                                                                                                                                                                   |
| tenant_id        | No        | String  | Specifies the ID of the project where the whitelist is used.<br>The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                               |
| listener_id      | No        | String  | Specifies the ID of the listener to which the whitelist is added.                                                                                                                                                                                                                                                                                                                                                             |
| enable_whitelist | No        | Boolean | Specifies whether to enable access control.<br><b>true</b> : Access control is enabled.<br><b>false</b> : Access control is disabled.                                                                                                                                                                                                                                                                                         |
| whitelist        | No        | String  | Specifies the IP addresses in the whitelist.                                                                                                                                                                                                                                                                                                                                                                                  |

## Response

**Table 10-185** Response parameters

| Parameter        | Type  | Description                                                                                                                                                                                                   |
|------------------|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| whitelists       | Array | Lists the whitelists. For details, see <a href="#">Table 10-186</a> .                                                                                                                                         |
| whitelists_links | Array | Provides links to the previous or next page during pagination query, respectively.<br>This parameter exists only in the response body of pagination query.<br>For details, see <a href="#">Table 10-187</a> . |

**Table 10-186 whitelist** parameter description

| Parameter        | Type   | Description                                                                                                                           |
|------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------|
| id               | String | Specifies the whitelist ID.                                                                                                           |
| tenant_id        | String | Specifies the ID of the project where the whitelist is used.<br>The value contains a maximum of 255 characters.                       |
| listener_id      | String | Specifies the ID of the listener to which the whitelist is added.                                                                     |
| enable_whitelist | Bool   | Specifies whether to enable access control.<br><b>true</b> : Access control is enabled.<br><b>false</b> : Access control is disabled. |
| whitelist        | String | Specifies the IP addresses in the whitelist.                                                                                          |

**Table 10-187 whitelists\_links** parameter description

| Parameter | Type   | Description                                                                                                                                                                                                                                                           |
|-----------|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| href      | String | Provides links to the previous or next page during pagination query, respectively.                                                                                                                                                                                    |
| rel       | String | Specifies the prompt of the previous or next page.<br>The value can be <b>next</b> or <b>previous</b> . The value <b>next</b> indicates the href containing the URL of the next page, and <b>previous</b> indicates the href containing the URL of the previous page. |

## Example Request

- Example request 1: Querying all whitelists  
GET https://{Endpoint}/v2.0/lbaas/whitelists
- Example request 2: Querying the whitelists added to listener eabfefa3fd1740a88a47ad98e132d230  
GET https://{Endpoint}/v2.0/lbaas/whitelists?listener\_id=eabfefa3fd1740a88a47ad98e132d230

## Example Response

- Example response 1

```
{
 "whitelists": [
 {
 "id": "eabfefa3fd1740a88a47ad98e132d238",
 "listener_id": "eabfefa3fd1740a88a47ad98e132d238",
 "tenant_id": "eabfefa3fd1740a88a47ad98e132d238",
 "enable_whitelist": true,
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
 },
 {
 "id": "eabfefa3fd1740a88a47ad98e132d326",
 "listener_id": "eabfefa3fd1740a88a47ad98e132d327",
 "tenant_id": "eabfefa3fd1740a88a47ad98e132d436",
 "enable_whitelist": true,
 "whitelist": "192.168.12.1,192.168.1.1/24,192.168.203.18/8,100.164.5.1/24"
 }
]
}
```

• Example response 2

```
{
 "whitelists": [
 {
 "id": "eabfefa3fd1740a88a47ad98e132d238",
 "listener_id": "eabfefa3fd1740a88a47ad98e132d230",
 "tenant_id": "eabfefa3fd1740a88a47ad98e132d239",
 "enable_whitelist": true,
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
 },
 {
 "id": "eabfefa3fd1740a88a47ad98e132d326",
 "listener_id": "eabfefa3fd1740a88a47ad98e132d327",
 "tenant_id": "eabfefa3fd1740a88a47ad98e132d439",
 "enable_whitelist": true,
 "whitelist": "192.168.12.1,192.168.1.1/24,192.168.203.18/8,100.164.5.1/24"
 }
]
}
```

Status Code

For details, see [Status Codes](#).

10.1.8.3 Querying Details of a Whitelist

Function

This API is used to query details about a whitelist using its ID.

URI

GET /v2.0/lbaas/whitelists/{whitelist\_id}

Table 10-188 Parameter description

| Parameter    | Mandatory | Type   | Description                 |
|--------------|-----------|--------|-----------------------------|
| whitelist_id | Yes       | String | Specifies the whitelist ID. |

## Request

None

## Response

**Table 10-189** Response parameters

| Parameter | Type   | Description                                                              |
|-----------|--------|--------------------------------------------------------------------------|
| whitelist | Object | Specifies the whitelist. For details, see <a href="#">Table 10-190</a> . |

**Table 10-190** whitelist parameter description

| Parameter        | Type    | Description                                                                                                                           |
|------------------|---------|---------------------------------------------------------------------------------------------------------------------------------------|
| id               | String  | Specifies the whitelist ID.                                                                                                           |
| tenant_id        | String  | Specifies the ID of the project where the forwarding rule is used.<br>The value contains a maximum of 255 characters.                 |
| listener_id      | String  | Specifies the ID of the listener to which the whitelist is added.                                                                     |
| enable_whitelist | Boolean | Specifies whether to enable access control.<br><b>true</b> : Access control is enabled.<br><b>false</b> : Access control is disabled. |
| whitelist        | String  | Specifies the IP addresses in the whitelist.                                                                                          |

## Example Request

- Example request: Querying details of a whitelist  
GET https://{Endpoint}/v2.0/lbaas/whitelists/09e64049-2ab0-4763-a8c5-f4207875dc3e

## Example Response

- Example response

```
{
 "whitelist": {
 "id": "eabfefa3fd1740a88a47ad98e132d238",
 "listener_id": "eabfefa3fd1740a88a47ad98e132d238",
 "tenant_id": "eabfefa3fd1740a88a47ad98e132d238",
 "enable_whitelist": true,
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
 }
}
```



## Status Code

For details, see [Status Codes](#).

### 10.1.8.4 Updating a Whitelist

## Function

This API is used to update a whitelist. You can enable or disable the whitelist function or change IP addresses in the whitelist. If you change IP addresses in the whitelist, it will be deleted, and a new one is generated.

## URI

PUT /v2.0/lbaas/whitelists/{whitelist\_id}

**Table 10-191** Parameter description

| Parameter    | Mandatory | Type   | Description                 |
|--------------|-----------|--------|-----------------------------|
| whitelist_id | Yes       | String | Specifies the whitelist ID. |

## Request

**Table 10-192** Parameter description

| Parameter | Mandatory | Type   | Description                                                              |
|-----------|-----------|--------|--------------------------------------------------------------------------|
| whitelist | Yes       | Object | Specifies the whitelist. For details, see <a href="#">Table 10-193</a> . |

**Table 10-193** whitelist parameter description

| Parameter        | Mandatory | Type    | Description                                                                                                                                                                 |
|------------------|-----------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| enable_whitelist | No        | Boolean | Specifies whether to enable access control.<br><b>true</b> : Access control is enabled.<br><b>false</b> : Access control is disabled.<br>The default value is <b>true</b> . |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                    |
|-----------|-----------|--------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| whitelist | No        | String | <p>Specifies the IP addresses in the whitelist. Use commas (,) to separate multiple IP addresses.</p> <p>You can specify an IP address, for example, 192.168.11.1.</p> <p>You can also specify an IP address range, for example, 192.168.0.1/24.</p> <p>The default value is an empty string, that is, "".</p> |

## Response

**Table 10-194** Parameter description

| Parameter | Type   | Description                                                              |
|-----------|--------|--------------------------------------------------------------------------|
| whitelist | Object | Specifies the whitelist. For details, see <a href="#">Table 10-195</a> . |

**Table 10-195** whitelist parameter description

| Parameter        | Type    | Description                                                                                                                                        |
|------------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| id               | String  | Specifies the whitelist ID.                                                                                                                        |
| tenant_id        | String  | <p>Specifies the ID of the project where the whitelist is used.</p> <p>The value contains a maximum of 255 characters.</p>                         |
| listener_id      | String  | Specifies the ID of the listener to which the whitelist is added.                                                                                  |
| enable_whitelist | Boolean | <p>Specifies whether to enable access control.</p> <p><b>true:</b> Access control is enabled.</p> <p><b>false:</b> Access control is disabled.</p> |
| whitelist        | String  | Specifies the IP addresses in the whitelist.                                                                                                       |

## Example Request

- Example request: Updating a whitelist  
PUT https://{Endpoint}/v2.0/lbaas/whitelists/dcaf46f1-037c-4f63-a31f-e0c4c18032c7  
{

```
"whitelist": {
 "enable_whitelist": true,
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
}
```

Example Response

- Example response

```
{
 "whitelist": {
 "id": "eabfefa3fd1740a88a47ad98e132d238",
 "listener_id": "eabfefa3fd1740a88a47ad98e132d238",
 "tenant_id": "eabfefa3fd1740a88a47ad98e132d238",
 "enable_whitelist": true,
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
 }
}
```

Status Code

For details, see [Status Codes](#).

10.1.8.5 Deleting a Whitelist

Function

This API is used to delete a specific whitelist.

URI

DELETE /v2.0/lbaas/whitelists/{whitelist\_id}

Table 10-196 Parameter description

| Parameter    | Mandatory | Type   | Description                 |
|--------------|-----------|--------|-----------------------------|
| whitelist_id | Yes       | String | Specifies the whitelist ID. |

Request

None

Response

None

Example Request

- Example request: Deleting a whitelist  
DELETE https://{Endpoint}/v2.0/lbaas/whitelists/35cb8516-1173-4035-8dae-0dae3453f37f

Example Response

- Example response 1

None

## Status Code

For details, see [Status Codes](#).

## 10.1.9 Certificate

### 10.1.9.1 Creating a Certificate

#### Function

This API is used to create a certificate. After a certificate is bound to a listener, the load balancer authenticates the client using this certificate, and backend servers can establish secure and reliable HTTP connections with the client.

#### URI

POST /v2.0/lbaas/certificates

#### Request

**Table 10-197** Parameter description

| Parameter      | Mandatory | Type    | Description                                                                                                                                                                                             |
|----------------|-----------|---------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| tenant_id      | No        | String  | Specifies the ID of the project where the certificate is used.<br><br>The value must be the same as the value of <b>project_id</b> in the token.<br><br>The value contains a maximum of 255 characters. |
| admin_state_up | No        | Boolean | Specifies the administrative status of the certificate.<br><br>This parameter is reserved, and the default value is <b>true</b> .                                                                       |
| name           | No        | String  | Specifies the certificate name.<br><br>The value contains a maximum of 255 characters.                                                                                                                  |
| description    | No        | String  | Provides supplementary information about the certificate.<br><br>The value contains a maximum of 255 characters.                                                                                        |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type        | No        | String | <p>Specifies the certificate type. The default value is <b>server</b>.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>server</b>: indicates the server certificate.</li><li>• <b>client</b>: indicates the CA certificate.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| domain      | No        | String | <p>Specifies the domain name associated with the server certificate.</p> <p>A domain name can contain up to 100 characters. You can specify up to 30 domain names and separate them using commas (,).</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• A common domain name contains 0 to 100 characters and consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit. Example: www.test.com</li><li>• In addition to the requirements for common domain names, a wildcard domain name can start with an asterisk (*). Example: *.test.com</li></ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• This parameter is valid only when <b>type</b> is set to <b>server</b>.</li></ul> |
| private_key | No        | String | <p>Specifies the private key of the server certificate. The value must be PEM encoded.</p> <ul style="list-style-type: none"><li>• This parameter will be ignored if <b>type</b> is set to <b>client</b>. A CA server can still be created and used normally. This parameter will be left blank even if you enter a private key that is not PEM encoded.</li><li>• This parameter is valid and mandatory only when <b>type</b> is set to <b>server</b>. If you enter an invalid private key, an error is returned.</li></ul>                                                                                                                                                                                                                                                                                                                                                       |
| certificate | Yes       | String | <p>Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter <b>type</b> determines whether a public key or CA certificate is required.</p> <p>The public key is in PEM format.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |

## Response

**Table 10-198** Parameter description

| Parameter      | Type    | Description                                                                                                                                                                                                                                   |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the certificate ID.                                                                                                                                                                                                                 |
| tenant_id      | String  | Specifies the ID of the project where the certificate is used.<br>The value contains a maximum of 255 characters.                                                                                                                             |
| admin_state_up | Boolean | Specifies the administrative status of the certificate.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>• <b>true</b>: Enabled</li><li>• <b>false</b>: Disabled</li></ul> |
| name           | String  | Specifies the certificate name.<br>The value contains a maximum of 255 characters.                                                                                                                                                            |
| description    | String  | Provides supplementary information about the certificate.<br>The value contains a maximum of 255 characters.                                                                                                                                  |
| type           | String  | Specifies the certificate type.<br>The value can be one of the following: <ul style="list-style-type: none"><li>• <b>server</b>: indicates the server certificate.</li><li>• <b>client</b>: indicates the CA certificate.</li></ul>           |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain      | String | <p>Specifies the domain name associated with the server certificate.</p> <p>A domain name can contain up to 100 characters. You can specify up to 30 domain names and separate them using commas (,).</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• A common domain name contains 0 to 100 characters and consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit. Example: www.test.com</li><li>• In addition to the requirements for common domain names, a wildcard domain name can start with an asterisk (*). Example: *.test.com</li></ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• This parameter is valid only when <b>type</b> is set to <b>server</b>.</li></ul> |
| private_key | String | Specifies the private key of the server certificate in PEM format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| certificate | String | Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter <b>type</b> determines whether a public key or CA certificate is required. Both types of certificates are in PEM format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| expire_time | String | Specifies the time when the certificate expired. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| create_time | String | Specifies the time when the certificate was created. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| update_time | String | Specifies the time when the certificate was updated. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## Example Request

- Example request: Creating a certificate  
POST <https://{Endpoint}/v2.0/lbaas/certificates>

```
{
 "name": "https_certificate",
 "description": "description for certificate",
 "type": "server",
 "domain": "www.elb.com",
 "private_key":
 "-----BEGIN PRIVATE KEY-----
 \nMIIEvglBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M
 \n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KCnX1nfzTvI2ksXITQ2o9BkpStnPe\ntB4s32ZiJRMlk
 +61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
 \nMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lcq39buNplgDOWzEP5AqzXt
 \nCOFYn6RTH5SRug4hKNN7sT1eYMsLHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Ch\lnZAPYUBkl/
 0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwlCRLU08k\neO04Z9H/
 AgMBAACGgEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
 \nfvCarftGgMaYWPSPNCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFgZjv5OQB
 \nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
 \nciu9YklnNEHu6uRJ5g/eGGX3KQynTvVIhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M\neGpfYI6AdHlwFZCT/
 RNAXhP82lg2gUJSgAu66FFdJmWQXKbafKdP3zq4Up8a7Ale\nkrguPtfV1vWklg
 +bUFhgGaiAEYTpAUN9t2DVliijQKBgQDnYMMsaF0r557CM1CT
 \nXUqgCZo8MKeV2jf2drlxRRwRL33SksQbzAQ/qrLd7GP3sCGqvkvWY2FPdFyF8kx
 \nGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpp7dt
 \nJ7n8EzkRUNE6alMHOFEeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
 \nniWgTWHXPZxUQaYhjpXo6+IMl6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
 \nIS6VjoTkF6r7VZolLX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
 \nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
 \nn1lVQhELG9CbKsdzKM71GyElmix/T7FnJSHIWlho1qVo6AQyduNWnAQD15pr8KAd
 \nXGAXAZZ1FQcb3KYa+2fflERmazedOTWjY0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak\n/
 735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha\nnfl7FPMdvGL8ioYbvlHFh
 +X0xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
 \n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAkJD4wHW54PwD4Ctfk9o
 \njHjWb7pQlUYpTZO9dm+4fpmn9Okf43AE2yAOaP94GdzdDJkxfciXKcsYr9lluk
 \nfaoXgjkR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd\nn3fy
 +1rCUwzOp9LSjtYf4ege\n-----END PRIVATE KEY-----",
 "certificate":
 "-----BEGIN CERTIFICATE-----
 \nMIIC4TCCAcmgAwIBAgIcERewDQYJKoZIhvcNAQELBQAwwFzEVMBMGA1UEAxMMTXID
 \nb21wYWV5IENBM4XDTE4MDcwMjEzU0N1oXDTQ1MTExNzEzU0N1owFDESMBAG
 \nA1UEAwJbG9jYWxob3N0M0IIBlJANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAn0FQGzi3ucTX
 +DNud1p/
 b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5\nuU0NqPQZKUrZz3rQeLN9mYiUTJZPutYlFDDb
 B8CtIgV+eyU9yYJslWx/
 Bm5kWNPh9\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
 \nIaZlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/K
 \ny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7ywnkOOTLMl28IEv0WY
 \nYd7CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
 \nhwQKuUvJhwr/AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsqGSIb3DQEBcWUA
 \nA4IBAQA8IMQJxaTey7EjXtRLSVIEAMftAQPG6ijNQuvIBQYUDauDT4W2XU25wAn
 \njiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKI0dl9I5I98TGKI6OoDa
 \nezmzCwQYtHBMVQ4c7ML8554Ft1mWst4dMAK2rzNyjvPRLYlp1Hmnl6hkjPk4PCZ
 \nnwKnha0dlScati9CCt3UzXSNJOSLaKdHErH08lqd+1BchScxChf0xNITn1HZZGml\n
 +vbmunok3A2lucl14rnsrbcGyqXGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ\niYsGDVN
 +9QBd0eYUHce+77s96i3l\n-----END CERTIFICATE-----"
}
```

## Example Response

- Example response

```
{
 "domain": "www.elb.com",
 "expire_time": "2045-11-17 13:25:47",
 "update_time": "2017-12-04 06:49:13",
 "create_time": "2017-12-04 06:49:13",
 "id": "3d8a7a02f87a40ed931b719edfe75451",
 "admin_state_up": true,
 "private_key": "-----BEGIN PRIVATE KEY-----
 \nMIIEvglBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M
 \n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KCnX1nfzTvI2ksXITQ2o9BkpStnPe\ntB4s32ZiJRMlk
 +61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
 \nMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lcq39buNplgDOWzEP5AqzXt
```



```
\nCOFYn6RTH5SRug4hKNN7sT1eYMslHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl\nZAPYUBkl/
0XuTWrg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwlCRLU08k\nEo04Z9H/
AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\nfvCArftGgMaYWPSPNCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFgZjv5OQB
\nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
\nnciu9YKlnNEHu6uRI5g/eGGX3KQynTvlHnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M\nnEGpfYI6AdHlwFZcT/
RNAXhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7Ale\nnkrgruPtFv1vWklg
+bUfhGaiAEYTpAUN9t2DVIijgQKBgQDnYMMsaF0r557CM1CT
\nXUqgCZo8MKeV2jf2drlxRRwRL33SksQbzAQ/qRLd7GP3sCGqvKxWY2FPdFYf8kx
\nGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpp7dt
\nJ7n8EzkRUNE6aIMHOFeeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\nniWgTWXHPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7yQYiYWU+wthAr9urbWYdGZ
\nlS6VjoTkF6r7VZolLXX0fBuXh6lm8K8lQRfBpjff56p9pMwaBpDNDrfpHB5utBU
\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zf3bGSXU/jR4eB
\n1lVQhELGI9CbKSdzKM71GyElmix/T7FnJSHIWIho1qVo6AQyduNWnAQD15pr8KAd
\nXGXAZZ1FQcb3KYa+2fflERmazdOTWjY0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak\n/
735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha\nnfl7FPMdvGl8ioYbvlHFH
+X0Xs9r1S8yeWnHoXMB6eXWmYKMJrAoveLa+2cFm1Agf
\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAjkD4wHW54PwD4Ctfk9o
\nhjHjWB7pQLUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDjKxfciXKcsYr9lluk
\nfaoXgjkR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BULGKMWXzuEd\nn3fy
+1rCUwzOp9LSjtYf4ege\n-----END PRIVATE KEY-----",
 "tenant_id": "930600df07ac4f66964004041bd3deaf",
 "type": "server",
 "certificate": "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgIcERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nnb21wYW55IENBMBA4XDTE4MDcwMjEzMDU0N1oXDTQ1MTExNzEzMDU0N1owFDESMBAG
\nA1UEAwWJbG9jYWxob3N0MIIlBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAn0FQGzi3ucTX
+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5\nU0NqPQZKUrZz3rQeLN9mYiUTJZPutYlFDDb
B8CtIgV+eyU9yYJslWx/
Bm5kWNPh9\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\nlAzlsxD+QM6L7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/K
\ny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7yw3nkOOTLMI28IEv0WY
\nYd7CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\nnhwQKuUvJhwr/AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBCwUA
\nA4IBAQA8lMQxaTey7EjXtRLSVIEAMftAQPG6ijNQuvIBQYUDauDT4W2XUZ5wAn
\nnjiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
\nnezmcwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRLYLzp1HMn16hkjPk4PCZ
\nnwKnha0dlScati9CCt3UzXSNJOSLaKdHErH08lqd+1BchScxChk0xNiTn1HZZGml\n
+vbmunok3A2luc14rnsrckbGYqGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ\nniysGDVN
+9QBd0eYUHce+77s96i3l\n-----END CERTIFICATE-----",
 "name": "https_certificate",
 "description": "description for certificate"
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.9.2 Querying Certificates

## Function

This API is used to query all the certificates. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

## Constraints

Parameters **marker**, **limit**, and **page\_reverse** are used for pagination query. Parameters **marker** and **page\_reverse** take effect only when they are used together with parameter **limit**.

## URI

GET /v2.0/lbaas/certificates

## Request

**Table 10-199** Parameter description

| Parameter    | Mandator<br>y | Type    | Description                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------|---------------|---------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| marker       | No            | String  | Specifies the ID of the certificate from which pagination query starts, that is, the ID of the last certificate on the previous page. This parameter must be used together with <b>limit</b> .                                                                                                                                                                                                                             |
| limit        | No            | Integer | Specifies the number of certificates on each page. If this parameter is not set, all certificates are queried by default.                                                                                                                                                                                                                                                                                                  |
| page_reverse | No            | Boolean | Specifies the page direction. The value can be <b>true</b> or <b>false</b> , and the default value is <b>false</b> . The last page in the list requested with <b>page_reverse</b> set to <b>false</b> will not contain the "next" link, and the last page in the list requested with <b>page_reverse</b> set to <b>true</b> will not contain the "previous" link. This parameter must be used together with <b>limit</b> . |
| id           | No            | String  | Specifies the certificate ID.                                                                                                                                                                                                                                                                                                                                                                                              |
| name         | No            | String  | Specifies the certificate name. The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                                            |
| description  | No            | String  | Provides supplementary information about the certificate. The value contains a maximum of 255 characters.                                                                                                                                                                                                                                                                                                                  |

| Parameter | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| type      | No        | String | <p>Specifies the certificate type. The default value is <b>server</b>.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• <b>server</b>: indicates the server certificate.</li><li>• <b>client</b>: indicates the CA certificate.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| domain    | No        | String | <p>Specifies the domain name associated with the server certificate.</p> <p>A domain name can contain up to 100 characters. You can specify up to 30 domain names and separate them using commas (,).</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• A common domain name contains 0 to 100 characters and consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit. Example: www.test.com</li><li>• In addition to the requirements for common domain names, a wildcard domain name can start with an asterisk (*). Example: *.test.com</li></ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• This parameter is valid only when <b>type</b> is set to <b>server</b>.</li></ul> |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| private_key | No        | String | <p>Specifies the private key of the server certificate. The value must be PEM encoded.</p> <ul style="list-style-type: none"><li>• This parameter will be ignored if <b>type</b> is set to <b>client</b>. A CA server can still be created and used normally. This parameter will be left blank even if you enter a private key that is not PEM encoded.</li><li>• This parameter is valid and mandatory only when <b>type</b> is set to <b>server</b>. If you enter an invalid private key, an error is returned.</li></ul> |
| certificate | No        | String | <p>Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter <b>type</b> determines whether a public key or CA certificate is required. Both types of certificates are in PEM format.</p>                                                                                                                                                                                                                                                                 |
| create_time | No        | String | <p>Specifies the time when the certificate was created.</p> <p>The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format.</p>                                                                                                                                                                                                                                                                                                                                                                                                     |
| update_time | No        | String | <p>Specifies the time when the certificate was updated.</p> <p>The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format.</p>                                                                                                                                                                                                                                                                                                                                                                                                     |

## Response

**Table 10-200** Parameter description

| Parameter    | Type    | Description                                                             |
|--------------|---------|-------------------------------------------------------------------------|
| certificates | Array   | Lists the certificates. For details, see <a href="#">Table 10-201</a> . |
| instance_num | Integer | Specifies the number of certificates.                                   |

**Table 10-201 certificates** parameter description

| Parameter      | Type    | Description                                                                                                                                                                                                                                   |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the certificate ID.                                                                                                                                                                                                                 |
| tenant_id      | String  | Specifies the ID of the project where the certificate is used.<br>The value contains a maximum of 255 characters.                                                                                                                             |
| admin_state_up | Boolean | Specifies the administrative status of the certificate.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>● <b>true</b>: Enabled</li><li>● <b>false</b>: Disabled</li></ul> |
| name           | String  | Specifies the certificate name.<br>The value contains a maximum of 255 characters.                                                                                                                                                            |
| description    | String  | Provides supplementary information about the certificate.<br>The value contains a maximum of 255 characters.                                                                                                                                  |
| type           | String  | Specifies the certificate type.<br>The value can be one of the following: <ul style="list-style-type: none"><li>● <b>server</b>: indicates the server certificate.</li><li>● <b>client</b>: indicates the CA certificate.</li></ul>           |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain      | String | <p>Specifies the domain name associated with the server certificate.</p> <p>A domain name can contain up to 100 characters. You can specify up to 30 domain names and separate them using commas (,).</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• A common domain name contains 0 to 100 characters and consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit. Example: www.test.com</li><li>• In addition to the requirements for common domain names, a wildcard domain name can start with an asterisk (*). Example: *.test.com</li></ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• This parameter is valid only when <b>type</b> is set to <b>server</b>.</li></ul> |
| private_key | String | Specifies the private key of the server certificate in PEM format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| certificate | String | Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter <b>type</b> determines whether a public key or CA certificate is required. Both types of certificates are in PEM format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| expire_time | String | Specifies the time when the certificate expired. The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| create_time | String | Specifies the time when the certificate was created. The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| update_time | String | Specifies the time when the certificate was updated. The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## Example Request

- Request example 1: Querying all certificates  
GET https://{Endpoint}/v2.0/lbaas/certificates

- Example 2: Querying a certificate whose ID is ef4d341365754a959556576501791b19 or ed40e8ea9957488ea82de025e35b74c0

GET https://{Endpoint}/v2.0/lbaas/certificates?

id=ef4d341365754a959556576501791b19&id=ed40e8ea9957488ea82de025e35b74c0

## Example Response

- Example response 1

```
{
 "certificates": [
 {
 "certificate": "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgIcEREWdQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nb21wYW50IENBM4XDTE4MDcwMjEzZjF9F7k1kYNwqlTz3CPILZUUn7yw3nkOOTLMi28IEv0WY
\nA1UEAwWJbG9jYWxob3N0MIIlBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAn0FQGzi3ucTX
+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5\nU0NqPQZKURzZ3rQeLN9mYiUTJZPutYlFDDb
B8CtIgV+eyU9yYJslWx/
Bm5kWNPh9\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\nlA1zlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/K
\ny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7yw3nkOOTLMi28IEv0WY
\nYd7CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21hAw4uY29t
\nnhwQKuUvJhwr/AAABMBMGA1UdJQMMMAoGCCsGAQUFBwMBMA0GCsqGSIb3DQEBcWUA
\nA4lBAQA8lMQJxaTey7EjXtRLSVIEAMftAQPG6ijNQuvIBQYUDauDT4W2XU5wAn
\nnjiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKI0dI9I5I98TGKI6OoDa
\nnezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRLYLp1HMnl6hkJpK4PCZ
\nnwKnha0dlScati9CCt3UzXSNJOSLaKdHErH08lqd+1BchScxChk0xNITn1HZZGml\n
+vbmunok3A2lucl14nsrcbkGYqxGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ\niYsGDVN
+9QBd0eYUHce+77s96i3l\n-----END CERTIFICATE-----",
 "create_time": "2017-02-25 09:35:27",
 "expire_time": "2045-11-17 13:25:47",
 "description": "description for certificate",
 "domain": "www.elb.com",
 "id": "23ef9aad4ecb463580476d324a6c71af",
 "admin_state_up": true,
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "name": "https_certificate",
 "private_key": "-----BEGIN PRIVATE KEY-----
\nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KcN1nfzTvl2ksXlTQ2o9BkpStnPntB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nMD30gHh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lcq39buNplgDOWzEP5AqzXt
\nCOFYn6RTH5SRug4hKNN7sT1eYMsLHu7wtEBDKVgrLJOce/W2f8rLT1zEs0AW2Chl\nZAPYUBkl/
0XuTWRg3CohPPcl+UtlRSfVLDeeQ460swjbgwS/RbJh3slwLCRLU08k\nEo04Z9H/
AgMBAAECCgEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\nfvfCArftGgMaYWPNSCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFgZjv5OQB
\nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
\nnciu9YklnNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6j9k9cM\nnEGpfYI6AdHlwFZcT/
RNAxhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7Ale\nnkrguPtfV1vWklg
+bUfhgGaiAEYTpAUN9t2DVIiijgQKBgQDnYMMsaF0r557CM1CT
\nXUqgCZo8MKeV2jf2drlxRRwRL33SksQbzAQ/qRldT7GP3sCGqvkvxWY2FPdFYf8kx
\nGcCeZPcleZYQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjppJ7dt
\nJ7n8EzkRUNE6alMHOFEeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\nniWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
\nlS6VjoTkF6r7VZoLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
\nnxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
\nl1VQhELGI9CbKsDzKM71GyElmix/T7FnJSHIWLho1qVo6AQyduNWnAQD15pr8KAd
\nnXGAZZ1FQcb3KYa+2fflERmazdOTWjYz0tGqZnXkEeMdSLkmqlCRigWhGQKbGdAk\n/
735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha\nnfl7FPMdvGL8ioYbvlHFH
+X0Xs9r1S8yeWnHoXMB6eXWmYKMMjrAoveLa+2cFm1Agf
\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9o
\nnjHjWB7pQlUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDJkxfciXKcsYr9Iluk
\nnfaoXgJkR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUlGKMWXzuEd\n3fy
+1rCUwzOp9LSjtYf4ege\n-----END PRIVATE KEY-----",
 "type": "server",
 "update_time": "2017-02-25 09:35:27"
 }
]
}
```

```
 },
],
 "instance_num": 1
}
```

- Example response 2

```
{
 "certificates": [
 {
 "description": "Push by SSL Certificate Manager",
 "domain": null,
 "id": "ed40e8ea9957488ea82de025e35b74c0",
 "name": "certForSonar9",
 "certificate": "-----BEGIN CERTIFICATE-----
MIIFizCCBHOGAwIBAgIQBlQycV3bWsVsCttw5rgRjANBgkqhkiG9w0BAQsFADBu
MQswCQYDVQQGEwJVUzEVMBMGA1UEChMMRGlnaUNlcnQgSW5jMRkwFwYDVQQLExB3
d3cuZGlnaWNLcnQuY29tMS0wKwYDVQQDEyRlbnNyeXB0aW9uIEV2ZXJ5d2hlcuUg
RFYgVExTIENBIC0gRzEwHhcNMTgwNzEwMDAwMDAwWWhcNMTkwNzEwMTIwMDAwWjA
UwRlEAYDVQQDEwlpY2UxMjMudGswggEiMA0GCSqGSIb3DQEBAQUAA4IBDwAwggEK
AoIBAQCtTDIqMoAvylnR6X1dihhNwbdGesbMW6NZX7ffpj9XrB3Kcqqxlz4VmH9
PntvrPLJNeolgLqDZZc4zKbUkmqY1dvGds41coKzdtc9lg23GVK48wfesnk5r50
afyU52R1JISHDOhiDhHOSyhrOzc2GreLrByWKfUaAue6rTnyMbZQaSPtrTAqsURZ
wcmJ6R3A6JwokOgxXBSu41ufPQIFkMgxygKxEBLzJlJlRqCXQHXYoxbsTyolb6jwp
w4H6vcRIEcFags98ApWRoEKjy7eOP3UUm05F+OkOvXhrLxEqIPm/rlwE0PmVlmm9
DgBaFyb3xT/MtT2VRsFClQHGlcSdAgMBAAGjggJ9MIICeTafBgNVHSMEGDAWgBRV
dE+yck/1YLpQ0dfmUVyaAYca1zAdBgNVHQ4EFgQUEFavzYXBNbIHbchbaKcUKad+
qCEwIwYDVR0RBwwGoIJaWNIMTlZLnRrgg13d3cuaWNIMTlZLnRrMA4GA1UdDwEB
/wQEAWIfoDAdBgNVHSUEFjAUBgggBgEFBQcDAQYIKwYBBQUHAWIwTAYDVR0gBEUw
QzA3BglghkgBhvh1sAQIwKjAoBggrBgEFBQcCARYcaHR0cHM6Ly93d3cuZGlnaWNL
cnQuY29tL0NQZuZAIgZngQwBAgEwgYEGCCsGAQUFBwEBBHUwczAlBggrBgEFBQcw
AYYZaHR0cDovL29jc3AyLmRpZ2ljZXJ0LmNvbTBKbGgrBgEFBQcwAoY+aHR0cDov
L2NhhY2VydHMuZGlnaWNLcnQuY29tL0V3J5cHRpb25FdmVyeXdoZXJIRFZUTFND
Q51HMS5jcnQwCQYDVROTBAlwADCCAQQGCisGAQQB1nkCBAIEgfUEgfIA8AB2AKS5
CZC0GFgUUh7sTosxncAo8NZgE+RvfuON3zQ7IDdwQAAABZIOncLCAAAQDAEcwRQIh
AJX6gCXNggPdfoFdtZpZlYr64TTrR/+b9QKKhyJ2EjBAiAWgu3BG2QK9tWQXPUN
IfadC0nvqmDovabg5nmRMan2mQB2Ald1v+dZfPiMQ5lfvNu/1aNR1Y2/0q1YMG0
6v9eolMPAAABZIOncLQEAQAQDAEcwRQIhAJVRe/7n88dD6KdhNrd4LdFjGARQNmta
Y/K2dFDQXPSfAiBOLrWW8unHOL25RWHJU7Ost3XkNhQYtrLDJrnzo/9kZzANBgkq
hkiG9w0BAQsFAAOCAQEAEqT9XcHmj4OnNAk0IGmF3nKS/u/UgGsY4EJfXwQY2bTZ
PCkqxQOA6HEX59vJ+UilTojrNDi0WskRm/8SKBhtMwRzwX3ile8KiR6ffFqHPUTV
XHZctfAFo47c7axqon8vumMLEv1PxVlmivQ446K7z3kGm34dhMYxS4Gz2gTl8IKt
90OegejuhbAs5Wlvp1BK8HlYIb5+mw+cgkUC9KtALs5qVbWzogs0bS20KaYarGcu
otcZAOMeJdBFWnpzhr1fxmjaNY4u4hrqPZSTU/iBjdHapoza3zAffxysmGYqs9dR
jFyxZeR4scz8GqSTFviNdH9jvtDJkdAC5hfMaB811Q==
-----END CERTIFICATE-----
-----BEGIN CERTIFICATE-----
MIIEqjCCA5KgAwIBAgIQAnmsRYvBskWr+YBTzSybsTANBgkqhkiG9w0BAQsFADBh
MQswCQYDVQQGEwJVUzEVMBMGA1UEChMMRGlnaUNlcnQgSW5jMRkwFwYDVQQLExB3
d3cuZGlnaWNLcnQuY29tMSAwHgYDVQQDEXdEaWdpQ2VydCBHbG9iYWwUgU9vdCBD
QTAEFw0xNzExMjcxMjQ2MTBaFw0yNzExMjcxMjQ2MTBaMG4xCzAJBgNVBAYTAiVT
MRUwEwYDVQQKEwxEaWdpQ2VydCBJbmMxGTAXBgNVBAsTEHd3dy5kaWdpY2VydC5j
b20xLTArBgNVBAMTJEV3J5cHRpb24gRXZlcnlnaWNLcnQwCQYDVQQLExB3d3cuZGlnaWNLcnQu
Y29tL0V3J5cHRpb25FdmVyeXdoZXJIRFZUTFNDQ51HMS5jcnQwCQYDVROTBAlwADCCAQQGCisGAQQB1nkCBAIEgfUEgfIA8AB2AKS5CZC0GFgUUh7sTosxncAo8NZgE+RvfuON3zQ7IDdwQAAABZIOncLCAAAQDAEcwRQIhAJX6gCXNggPdfoFdtZpZlYr64TTrR/+b9QKKhyJ2EjBAiAWgu3BG2QK9tWQXPUNIfadC0nvqmDovabg5nmRMan2mQB2Ald1v+dZfPiMQ5lfvNu/1aNR1Y2/0q1YMG06v9eolMPAAABZIOncLQEAQAQDAEcwRQIhAJVRe/7n88dD6KdhNrd4LdFjGARQNmtaY/K2dFDQXPSfAiBOLrWW8unHOL25RWHJU7Ost3XkNhQYtrLDJrnzo/9kZzANBgkqhkiG9w0BAQsFAAOCAQEAEqT9XcHmj4OnNAk0IGmF3nKS/u/UgGsY4EJfXwQY2bTZPCkqxQOA6HEX59vJ+UilTojrNDi0WskRm/8SKBhtMwRzwX3ile8KiR6ffFqHPUTVXHZctfAFo47c7axqon8vumMLEv1PxVlmivQ446K7z3kGm34dhMYxS4Gz2gTl8IKt90OegejuhbAs5Wlvp1BK8HlYIb5+mw+cgkUC9KtALs5qVbWzogs0bS20KaYarGcuotcZAOMeJdBFWnpzhr1fxmjaNY4u4hrqPZSTU/iBjdHapoza3zAffxysmGYqs9dRjFyxZeR4scz8GqSTFviNdH9jvtDJkdAC5hfMaB811Q==
-----END CERTIFICATE-----
-----BEGIN CERTIFICATE-----
MIIEqjCCA5KgAwIBAgIQAnmsRYvBskWr+YBTzSybsTANBgkqhkiG9w0BAQsFADBh
MQswCQYDVQQGEwJVUzEVMBMGA1UEChMMRGlnaUNlcnQgSW5jMRkwFwYDVQQLExB3
d3cuZGlnaWNLcnQuY29tMSAwHgYDVQQDEXdEaWdpQ2VydCBHbG9iYWwUgU9vdCBD
QTAEFw0xNzExMjcxMjQ2MTBaFw0yNzExMjcxMjQ2MTBaMG4xCzAJBgNVBAYTAiVT
MRUwEwYDVQQKEwxEaWdpQ2VydCBJbmMxGTAXBgNVBAsTEHd3dy5kaWdpY2VydC5j
b20xLTArBgNVBAMTJEV3J5cHRpb24gRXZlcnlnaWNLcnQwCQYDVQQLExB3d3cuZGlnaWNLcnQu
Y29tL0V3J5cHRpb25FdmVyeXdoZXJIRFZUTFNDQ51HMS5jcnQwCQYDVROTBAlwADCCAQQGCisGAQQB1nkCBAIEgfUEgfIA8AB2AKS5CZC0GFgUUh7sTosxncAo8NZgE+RvfuON3zQ7IDdwQAAABZIOncLCAAAQDAEcwRQIhAJX6gCXNggPdfoFdtZpZlYr64TTrR/+b9QKKhyJ2EjBAiAWgu3BG2QK9tWQXPUNIfadC0nvqmDovabg5nmRMan2mQB2Ald1v+dZfPiMQ5lfvNu/1aNR1Y2/0q1YMG06v9eolMPAAABZIOncLQEAQAQDAEcwRQIhAJVRe/7n88dD6KdhNrd4LdFjGARQNmtaY/K2dFDQXPSfAiBOLrWW8unHOL25RWHJU7Ost3XkNhQYtrLDJrnzo/9kZzANBgkqhkiG9w0BAQsFAAOCAQEAEqT9XcHmj4OnNAk0IGmF3nKS/u/UgGsY4EJfXwQY2bTZPCkqxQOA6HEX59vJ+UilTojrNDi0WskRm/8SKBhtMwRzwX3ile8KiR6ffFqHPUTVXHZctfAFo47c7axqon8vumMLEv1PxVlmivQ446K7z3kGm34dhMYxS4Gz2gTl8IKt90OegejuhbAs5Wlvp1BK8HlYIb5+mw+cgkUC9KtALs5qVbWzogs0bS20KaYarGcuotcZAOMeJdBFWnpzhr1fxmjaNY4u4hrqPZSTU/iBjdHapoza3zAffxysmGYqs9dRjFyxZeR4scz8GqSTFviNdH9jvtDJkdAC5hfMaB811Q==
-----END CERTIFICATE-----
-----BEGIN CERTIFICATE-----
MIIEqjCCA5KgAwIBAgIQAnmsRYvBskWr+YBTzSybsTANBgkqhkiG9w0BAQsFADBh
MQswCQYDVQQGEwJVUzEVMBMGA1UEChMMRGlnaUNlcnQgSW5jMRkwFwYDVQQLExB3
d3cuZGlnaWNLcnQuY29tMSAwHgYDVQQDEXdEaWdpQ2VydCBHbG9iYWwUgU9vdCBD
QTAEFw0xNzExMjcxMjQ2MTBaFw0yNzExMjcxMjQ2MTBaMG4xCzAJBgNVBAYTAiVT
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MIIEqjCCA5KgAwIBAgIQAnmsRYvBskWr+YBTzSybsTANBgkqhkiG9w0BAQsFADBh
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MRUwEwYDVQQKEwxEaWdpQ2VydCBJbmMxGTAXBgNVBAsTEHd3dy5kaWdpY2VydC5j
b20xLTArBgNVB
```



```
rMKWaBFLmfK/AHNF4ZihwPGOc7w6UHczBZXH5RFzJNnww+WnKuTPI0HfnVH8lg==
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 "type": "server",
 "create_time": "2019-03-03 16:32:30",
 "private_key": "-----BEGIN RSA PRIVATE KEY-----
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+JltqfJAeraXlinbp1Fxcg9DsQdMd6cw2DmrWa8CgYEA1UjOUzo80i4HYWDC4Vn
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5eDHscZKmx8fLcJRpZE8dXagPqXmwtj6E1vDvQWP9m06VDNctHfHB+nO0tLmidSk
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L7s+4it+nIQy24P6g1Pihtzsm+HD2UCERBiYUjdRK8Q9GGHdZojFk9Y=
-----END RSA PRIVATE KEY-----
",
 "update_time": "2019-03-03 16:32:30",
 "admin_state_up": true,
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "expire_time": "2019-07-10 12:00:00"
 },
 {
 "description": null,
 "domain": "www.elb.com",
 "id": "ef4d341365754a959556576501791b19",
 "name": "certificate_28b824c8bbe419992fb7974b2911c72",
 "certificate": "-----BEGIN CERTIFICATE-----
MIIDpTCCAo2gAwIBAgIJAKdmmOBYNFvoMA0GCSqGSIb3DQEBCwUAMGkxZCJABG
BAYTAnh4MQswCQYDVQQIDAJ4eDELMAkGA1UEBwwCeHgxZCJABGVBBAoMAnh4MQsw
CQYDVQQIDAJ4eDELMAkGA1UEAwwCeHgxGTAXBgkqhkiG9w0BCQEWCh4QDE2My5j
b20wHhcNMjM0MDM0MjQ5WWhcNMjM0MDM0MjQ5WjBpMQswCQYDVQQGEWJ4
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BjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAwZ5UJULAJwR7p6FVwGRQRjFN
2s8tZ/6LC3X82fajpVsYqF1xqEuUDndDXVD09E4u83MS6HO6a3bIVQDp6/klNyl
dIE6Vp8HH5BSKaCWKVg8LGWg1UM9wZFNlryi14KgmpIFmcu9nA8yV/6MZAe6RSDmb
3iyNBmiZ8aZhGw2pl1YwR+15MVqFFGB+7ExkziROi7L8CFCyCezK2/oOOvQsH1dz
Q8z1JXWdg8/9Zx7Ktvgwu5PQM3cJtSHX6iBPOkMU8Z8TugLLtQqXKZOEGwajwQ5
mf2DPkVgM08XAgALJcLigwD513koAdtJd5v+9irw+5LAuO3JclqwTwwy7u/YwwID
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FoAUo5A2tlu+bcUfvGTD7wmEkhXKFjcwDAYDVR0TBAAUwAwEB/zANBgkqhkiG9w0B
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c8Tdr8lDDNqoUtMD8BrUCJi+7lmMXRcC3Qi3oZJW76ja+kZA5mKVFPd1ATih8TbA
i34R7EQDtFeiSvBdeKRSPp8c0KT8H1B4IXNkkCQs2WX5p4lm99+ZtLD4glw8x6lc
i1YhgnQbn5E0hz55OLu5jvOkKQjPCW+8Kg==
-----END CERTIFICATE-----",
 "type": "server",
 "create_time": "2018-09-28 03:00:47",
 "private_key": "-----BEGIN RSA PRIVATE KEY-----
MIIeowiBAKCAQEAwZ5UJULAJwR7p6FVwGRQRjFN2s8tZ/6LC3X82fajpVsYqF1x
qEuUDndDXVD09E4u83MS6HO6a3bIVQDp6/klNylDI6Vp8HH5BSKaCWKVg8LGWg1
-----END RSA PRIVATE KEY-----"
```

```
UM9wZFnlryi14KgmpIFmcu9nA8yV/6MZAe6RSDmb3iyNBmiZ8aZhGw2p1YwR+15
MVqFFGB+7ExkziROi7L8CFCyCezK2/oOOvQsH1dzQ8z1JXWdg8/9Zx7Ktvgwu5PQ
M3cItSHX6iBPOkMU8Z8TugLITqQXKZOEgwajwvQ5mf2DPkVgM08XAgALJcLigWd5
13koAdtId5v+9irw+5LAuO3JclqwTvwy7u/YwwIDAQABAoIBACU9S5fjD9/jTMAXA
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iMXLWdwXYHhJ/1HVOo603oZyiS6HZeYU089NDUCx+1Sji3e5Ke0gPVXEgCq1O11/
rh24bMxnwZo4PKBWdcMBN5Zf/4ij9vrZE+fFzW7vGBO48A5lvZxWU2U5t/OZQRtN
1uLOHmMFa0FIF2aWbTVfwdUWAFsvAOKHj9Vv8BXOUwKOUuEktdkfAlvrmsFrO/H
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RoEBUajwrnf1ycevN/SDfbtWzq2XJGqhWdJmtpO16b7KBsC6BdRcH6dnOYh31jgA
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Uk/eiFr3hfH/ZohMfV5p82Qp7DNIGRzw8YtVG/3+vNXrAXW1VhugNhQY6L+zLzJC
aKn84ooup0m3YCG0hvlNqluvzfsuzQgtjTXyaE0cEwsjUusOmiuj09vVx/3U7siK
Hdj2ICPCvQ6Q8tdi8jV320gMs05AtaBkZdsiWUCgYEAtLw4Kk4f+xTKDFsrLUNf
75wcqhWVBiwBp7yQ7UX4EYsJPKZcHMRTk0EEcAbpyaJZE3I44vjp5ReXIHNLMfPs
uvl34J4Rfot0LN3n7cFrAi2+wpNo+MOBwrNzpRmijGP2uKKrq4JiMjFbKV/6utGF
Up7Vxfws904JYpqGaZctiECgYA1A6nZtF0riY6ry/uAdXpZHL8ONNqRZtWoT0kD
79otSVu5iSiRbaGcXsDExC52oKrSDAgFtbqQUiEOFG09UcXfoR6HwRkba2CiDwve
yHQLQI5Qrdxz8Mk0glrNrSM4FamcW9vi9z4kCbQyoC5C+4gqeUURpDlkQBWP2Y4
2ct/bQKBgHv8qCsQTZphOxc31BJPa2xVhuv18cEU3XLURVfUZ/1f43JhLp7gynS2
ep++LKUi9D0VGXY8bqvJjBECeCu85vl8NpCXwe/LoVoln+7KaVIZMwqoGMfgNl
nEqm7HWkNxHhf8A6En/ljleuddS1sf9e/x+TJN1Xhnt9W6pe7Fk1
-----END RSA PRIVATE KEY-----",
 "update_time": "2018-09-28 03:00:47",
 "admin_state_up": true,
 "tenant_id": "601240b9c5c94059b63d484c92cfe308",
 "expire_time": "2020-12-03 03:42:49"
},
"instance_num": 2
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.9.3 Querying Details of a Certificate

## Function

This API is used to query details about a certificate.

## URI

GET /v2.0/lbaas/certificates/{certificate\_id}

**Table 10-202** Parameter description

| Parameter      | Mandatory | Type   | Description                   |
|----------------|-----------|--------|-------------------------------|
| certificate_id | Yes       | String | Specifies the certificate ID. |

## Request

None

## Response

**Table 10-203** Parameter description

| Parameter      | Type    | Description                                                                                                                                                                                                                                   |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the certificate ID.                                                                                                                                                                                                                 |
| tenant_id      | String  | Specifies the ID of the project where the certificate is used.<br>The value contains a maximum of 255 characters.                                                                                                                             |
| admin_state_up | Boolean | Specifies the administrative status of the certificate.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>● <b>true</b>: Enabled</li><li>● <b>false</b>: Disabled</li></ul> |
| name           | String  | Specifies the certificate name.<br>The value contains a maximum of 255 characters.                                                                                                                                                            |
| description    | String  | Provides supplementary information about the certificate.<br>The value contains a maximum of 255 characters.                                                                                                                                  |
| type           | String  | Specifies the certificate type.<br>The value can be one of the following: <ul style="list-style-type: none"><li>● <b>server</b>: indicates the server certificate.</li><li>● <b>client</b>: indicates the CA certificate.</li></ul>           |

| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain      | String | <p>Specifies the domain name associated with the server certificate.</p> <p>A domain name can contain up to 100 characters. You can specify up to 30 domain names and separate them using commas (,).</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• A common domain name contains 0 to 100 characters and consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit. Example: www.test.com</li><li>• In addition to the requirements for common domain names, a wildcard domain name can start with an asterisk (*). Example: *.test.com</li></ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• This parameter is valid only when <b>type</b> is set to <b>server</b>.</li></ul> |
| private_key | String | Specifies the private key of the server certificate in PEM format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| certificate | String | Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter <b>type</b> determines whether a public key or CA certificate is required. Both types of certificates are in PEM format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| expire_time | String | Specifies the time when the certificate expired. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| create_time | String | Specifies the time when the certificate was created. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| update_time | String | Specifies the time when the certificate was updated. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## Example Request

- Example request: Querying details of a certificate  
GET https://{Endpoint}/v2.0/lbaas/certificates/23ef9aad4ecb463580476d324a6c71af

## Example Response

- Example response

```
{
 "certificate":
 "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgICERewDQYJKoZIhvcNAQELBQAwFzEVMBMGGA1UEAxMMTXID
\nb21wYW55IENBMBA4XDTE4MDcwMjEzMjU0N1oXDTQ1MTExNzEzMjU0N1owFDESMBAG
\nA1UEAwwJbG9jYWxob3N0MIIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
\n0FQGzi3ucTX+DNud1p/b4XVM6I3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5
\nuU0nQPQZKUrZz3rQeLN9mYiUTJZPutYlFDDbB8CtIgV+eyU9yYJstWx/Bm5kWNPh9
\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxLnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\nlnlAzlsx+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylYKy4zgnv1tn/K
\nny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPILZUUn7ywnkOOtLMl28IEv0WY
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\nnhwQKuUvJhwR/AAABMBMGGA1UdJQMMAAoGCCsGAQUFBwMBMA0GCSCqSGB3DQEBcWUA
\nA4IBAQA8lMQJxaTey7EjXtRLSVIEAMftAQPG6jijNQuvIBQYUDauDT4W2XU5wAn
\nnjiOyQ83va672K1G9s8n6xIH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
\nnezmcCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNyjvPRLYLzp1HMnl6hkPk4PCZ
\nnwkNha0dlScati9Cct3UzXSNOJSLaKdHErH08lqd+1BchScxCfk0xNItn1HZZGml
\nn+vbmunok3A2luc14rnrcbkGYqxGikySN6B2cRLBDK4Y3wChiW6NvYtVqcx5/mZ
\nniYsGDVN+9QBd0eYUHce+77s96i3l
\n-----END CERTIFICATE-----",
 "create_time": "2017-02-25 09:35:27",
 "expire_time": "2045-11-17 13:25:47",
 "description": "description for certificate",
 "domain": "www.elb.com",
 "id": "23ef9aad4ecb463580476d324a6c71af",
 "tenant_id": "a31d2bdcf7604c0faadb058e1e08819",
 "admin_state_up": true,
 "name": "https_certificate",
 "private_key":
 "-----BEGIN PRIVATE KEY-----
\nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KcN1nfzTvI2ksXITQ2o9BkpStnPe
\nntB4s32ZiJRMlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72Luna7rM
\nnMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8Icq39buNplgDOWZEP5AqzXt
\nnCOfYn6RTH5SRug4hKNN7sT1eYMsLHu7wtEBDKVgrLjOCe/W2f8rLT1zEsOAW2Chl
\nnZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwlCRLU08k
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\nnfvCArftGgMaYWPNSNCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFgZjv5OQB
\nnZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
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\nnEGpfYI6ADHlwFZcT/RNAXhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7Ale
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\nnXUqgCZ08MKeV2jf2drlxRRwRL33SksQbzAQ/qrLdT7GP3sCGqvKxWY2FPdFYf8kx
\nnGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjppj7dt
\nnJ7n8EzkRUNE6alMHOFEeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\nniWgTWHXPZxUQaYhpjXo6+IMl6DpExiDgBAkMzJGlV57yQiyWU+wthAr9urbWYdGZ
\nnIS6VjoTkF6r7VZolLX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
\nnxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
\nn1lVQhELGI9CbKSdzKM71GyElmix/T7FnJSHIWLho1qVo6AQyduNWnAQD15pr8KAd
\nnXGAXAZZ1FQcb3KYa+2fflERmazedOTwYzOtGqZnXkEeMdSLkmqlCRigWhGQKBgDak
\nn/735uP20KKqhNehZpC2dJei7OilRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
\nnfl7FPMdvGl8ioYbvlHfH+X0Xs9r1S8yeWnHoXMB6eXWmYKMJrAoveLa+2cFm1Agf
\nn7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54Pwd4Ctfk9o
\nnjHjWB7pQLUYpTZO9dm+4fPMn9Okf43AE2yAOaAP94GdzdDJkxfciXKcsYr9lluk
\nnfaoXgjkR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd
\nn3fy+1rCUwzOp9LSjtYf4ege
\n-----END PRIVATE KEY-----",
 "type": "server",
 "update_time": "2017-02-25 09:35:27"
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.9.4 Updating a Certificate

#### Function

This API is used to update a certificate.

#### URI

PUT /v2.0/lbaas/certificates/{certificate\_id}

**Table 10-204** Parameter description

| Parameter      | Mandatory | Type   | Description                   |
|----------------|-----------|--------|-------------------------------|
| certificate_id | Yes       | String | Specifies the certificate ID. |

#### Request

**Table 10-205** Parameter description

| Parameter      | Mandatory | Type    | Description                                                                                                                   |
|----------------|-----------|---------|-------------------------------------------------------------------------------------------------------------------------------|
| admin_state_up | No        | Boolean | Specifies the administrative status of the certificate.<br>This parameter is reserved, and the default value is <b>true</b> . |
| name           | No        | String  | Specifies the certificate name.<br>The value contains a maximum of 255 characters.                                            |
| description    | No        | String  | Provides supplementary information about the certificate.<br>The value contains a maximum of 255 characters.                  |

| Parameter   | Mandatory | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|-----------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain      | No        | String | <p>Specifies the domain name associated with the server certificate.</p> <p>A domain name can contain up to 100 characters. You can specify up to 30 domain names and separate them using commas (,).</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• A common domain name contains 0 to 100 characters and consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit. Example: www.test.com</li><li>• In addition to the requirements for common domain names, a wildcard domain name can start with an asterisk (*). Example: *.test.com</li></ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• This parameter is valid only when <b>type</b> is set to <b>server</b>.</li></ul> |
| private_key | No        | String | <p>Specifies the private key of the server certificate. The value must be PEM encoded.</p> <ul style="list-style-type: none"><li>• This parameter will be ignored if <b>type</b> is set to <b>client</b>. A CA server can still be created and used normally. This parameter will be left blank even if you enter a private key that is not PEM encoded.</li><li>• This parameter is valid and mandatory only when <b>type</b> is set to <b>server</b>. If you enter an invalid private key, an error is returned.</li></ul>                                                                                                                                                                                                                                                                                                                                                       |
| certificate | No        | String | <p>Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter <b>type</b> determines whether a public key or CA certificate is required. The public key is in PEM format.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |

## Response

**Table 10-206** Parameter description

| Parameter      | Type    | Description                                                                                                                                                                                                                                   |
|----------------|---------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| id             | String  | Specifies the certificate ID.                                                                                                                                                                                                                 |
| tenant_id      | String  | Specifies the ID of the project where the certificate is used.<br>The value contains a maximum of 255 characters.                                                                                                                             |
| admin_state_up | Boolean | Specifies the administrative status of the certificate.<br>This parameter is reserved. The value can be <b>true</b> or <b>false</b> . <ul style="list-style-type: none"><li>● <b>true</b>: Enabled</li><li>● <b>false</b>: Disabled</li></ul> |
| name           | String  | Specifies the certificate name.<br>The value contains a maximum of 255 characters.                                                                                                                                                            |
| description    | String  | Provides supplementary information about the certificate.<br>The value contains a maximum of 255 characters.                                                                                                                                  |
| type           | String  | Specifies the certificate type.<br>The value can be one of the following: <ul style="list-style-type: none"><li>● <b>server</b>: indicates the server certificate.</li><li>● <b>client</b>: indicates the CA certificate.</li></ul>           |



| Parameter   | Type   | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------|--------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| domain      | String | <p>Specifies the domain name associated with the server certificate.</p> <p>A domain name can contain up to 100 characters. You can specify up to 30 domain names and separate them using commas (,).</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"><li>• A common domain name contains 0 to 100 characters and consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit. Example: www.test.com</li><li>• In addition to the requirements for common domain names, a wildcard domain name can start with an asterisk (*). Example: *.test.com</li></ul> <p><b>NOTE</b></p> <ul style="list-style-type: none"><li>• This parameter is valid only when <b>type</b> is set to <b>server</b>.</li></ul> |
| private_key | String | Specifies the private key of the server certificate in PEM format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| certificate | String | Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter <b>type</b> determines whether a public key or CA certificate is required. Both types of certificates are in PEM format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| expire_time | String | Specifies the time when the certificate expired. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| create_time | String | Specifies the time when the certificate was created. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| update_time | String | Specifies the time when the certificate was updated. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

## Example Request

- Example request: Updating a certificate  
PUT <https://{Endpoint}/v2.0/lbaas/certificates/23ef9aad4ecb463580476d324a6c71af>

```
{
 "certificate": "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgIcERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nb21wYW55IENBM4XDTE4MDcwMjEzMU0N1oXDTQ1MTExNzEzMjU0N1owFDESMBAG
\nA1UEAwwJbG9jYWxob3N0MIIlBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
\n0FQGzi3ucTX+DNud1p/b4XVM6I3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5
\nU0NqPQZKUrZz3rQeLN9mYiUTJZPutYlFDDbB8CtIgV+eyU9yYJslWx/Bm5kWNPh9
\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\nnIAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/K
\nny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7yw3nkOOTLMI28IEvOWy
\nYd7CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\nnhwQKUuvJhwr/AAABMBMGGA1UdJQMMAoGCCsGAQUFBwMBMA0GCsQGSib3DQEBcWUA
\nA4IBAQA8IMQxaTey7EjXtRLSVIEAMftAQPG6ijjNQuvlBQYUDauDT4W2XUZ5WAn
\nnjiOyQ83va672K1G9s8n6xlH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
\nnezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNyjvPRLYlp1HMnl6hkjPk4PCZ
\nnwKnha0dlScati9Cct3UzXSNJOSLaKdHErH08lqd+1BchScxChk0xNITn1HZZGml
\nn+vbmunok3A2luc14rnsrbcGyqXGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ
\nniYsGDVN+9QBd0eYUHce+77s96i3l
\n-----END CERTIFICATE-----",
 "description": "description for certificate",
 "domain": "www.elb.com",
 "name": "https_certificate",
 "private_key": "-----BEGIN PRIVATE KEY-----
\nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcj8KCN1nfzTvl2ksXlTQ2o9BkpStnP
\nbtB4s32ZiJRmlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nnMD30gHh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lCq39buNplgDwZEP5AzqXt
\nnCOFYn6RTH5SRug4hKNN7sT1eYMSlHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl
\nnZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwLCRLU08k
\nnEo04Z9H/AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\nnfvcArftGgMaYWPNSNCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUSHFgZjv5OQB
\nnZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
\nnciu9YklNNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
\nnEGpfYl6AdHlwFZcT/RNAXhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7Ale
\nnkrgruPtFv1vWklg+bUfhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\nnXUqgCZo8MKeV2jf2drlxRRwRL33SksQbzAQ/qrLdT7GP3sCGqvkvWY2FPdFyF8kx
\nnGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpp7dt
\nnJ7n8EzkRUNE6alMHOFEeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\nniWgTWHXPZxUQaYhpjXo6+IMl6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
\nnIS6VjoTkF6r7VZolLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
\nnxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKscpAg38zJf3bGSXU/jr4eB
\nn1lVQhELGI9CbKsdzKM71GyElmix/T7FnSHIWIho1qVo6AQyduNWNnAQD15pr8KAd
\nnXGXAZZ1FQcb3KYa+2fIERmazdOTWjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
\nn/735uP20KKqhNehZpC2dJei7OilGRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
\nnfl7FPMdvGlbioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMMJAoveLa+2cFm1Agf
\nn7nLhA4R4lqm9lpV6SKegDUK4fxp9pPyodZPqBLLAoGBAJKD4wHW54PwD4Ctfk9o
\nny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7yw3nkOOTLMI28IEvOWy
\nnfaoXgjKR7p1zERIwZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd
\nn3fy+1rCUwzOp9LSjtYf4eje
\n-----END PRIVATE KEY-----"
}
```

## Example Response

- Example response

```
{
 "certificate": "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgIcERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nb21wYW55IENBM4XDTE4MDcwMjEzMU0N1oXDTQ1MTExNzEzMjU0N1owFDESMBAG
\nA1UEAwwJbG9jYWxob3N0MIIlBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
\n0FQGzi3ucTX+DNud1p/
b4XVM6I3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5\nU0NqPQZKUrZz3rQeLN9mYiUTJZPutYlFDDbB8CtIgV+eyU9yYJslWx/
Bm5kWNPh9\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\nnIAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/K
\nny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7yw3nkOOTLMI28IEvOWy
\nYd7CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\n-----END CERTIFICATE-----",
 "description": "description for certificate",
 "domain": "www.elb.com",
 "name": "https_certificate",
 "private_key": "-----BEGIN PRIVATE KEY-----
\nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcj8KCN1nfzTvl2ksXlTQ2o9BkpStnP
\nbtB4s32ZiJRmlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nnMD30gHh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lCq39buNplgDwZEP5AzqXt
\nnCOFYn6RTH5SRug4hKNN7sT1eYMSlHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl
\nnZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwLCRLU08k
\nnEo04Z9H/AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\nnfvcArftGgMaYWPNSNCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUSHFgZjv5OQB
\nnZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
\nnciu9YklNNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
\nnEGpfYl6AdHlwFZcT/RNAXhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7Ale
\nnkrgruPtFv1vWklg+bUfhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\nnXUqgCZo8MKeV2jf2drlxRRwRL33SksQbzAQ/qrLdT7GP3sCGqvkvWY2FPdFyF8kx
\nnGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpp7dt
\nnJ7n8EzkRUNE6alMHOFEeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\nniWgTWHXPZxUQaYhpjXo6+IMl6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
\nnIS6VjoTkF6r7VZolLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
\nnxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKscpAg38zJf3bGSXU/jr4eB
\nn1lVQhELGI9CbKsdzKM71GyElmix/T7FnSHIWIho1qVo6AQyduNWNnAQD15pr8KAd
\nnXGXAZZ1FQcb3KYa+2fIERmazdOTWjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
\nn/735uP20KKqhNehZpC2dJei7OilGRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
\nnfl7FPMdvGlbioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMMJAoveLa+2cFm1Agf
\nn7nLhA4R4lqm9lpV6SKegDUK4fxp9pPyodZPqBLLAoGBAJKD4wHW54PwD4Ctfk9o
\nny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7yw3nkOOTLMI28IEvOWy
\nnfaoXgjKR7p1zERIwZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd
\nn3fy+1rCUwzOp9LSjtYf4eje
\n-----END PRIVATE KEY-----"
}
```

```
\nhwQKuUvJhwr/AAABMBMGA1UdJQMMMAoGCCsGAQUFBwMBMA0GCSqGSIb3DQEBCwUA
\nA4IBAQA8IMQxaTey7EjXtRLSVIEAMftAQPG6jjNQvIBQYUDauDT4W2XU25wAn
\njiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
\nnezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRLYLzp1HMnl6hkjPk4PCZ
\nnwKnha0dlScati9Cct3UzXSNJOSLaKdHErH08lqd+1BchScxCfk0xNITn1HZZGml\n
+vbmunok3A2lucl14nrsrckGYqXGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ\niYsGDVN
+9QBd0eYUHce+77s96i3l\n-----END CERTIFICATE-----",
 "expire_time": "2045-11-17 13:25:47",
 "create_time": "2017-02-25 09:35:27",
 "description": "description for certificate",
 "domain": "www.elb.com",
 "id": "23ef9aad4ecb463580476d324a6c71af",
 "admin_state_up": true,
 "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
 "name": "https_certificate",
 "private_key": "-----BEGIN PRIVATE KEY-----
\nMIIEvGlBADANBgkqhkiG9w0BAQEFAASCBAkwgSkAgEAAoIBAQDQVAbOLe5Xnf4M
\n253Wn9vhdUzojetjv4j+B7kYwsMhRcgdcJ8KcN1nfzTvI2ksXLTQ2o9BkpStnP
\nB4s32ZiJRMlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lq39buNpIgDOWZEP5AqXt
\nCOFYn6RTH5SRug4hKNN7sT1eYMsLHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl
\nZAPYUBkl/0XuTWVRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwCRLU08k
\nEo04Z9H/AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\nfvCArftGgMaYWPSPNCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFgZjv5QOB
\nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
\nnciu9YkInNEHu6uRI5g/eGGX3KQynTvIhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
\nEGpfYI6AdHlwFZcT/RNAXhP82lg2gUJSgAu66FFdJmWQXKbafKdP3zq4Up8a7Ale
\nnkrguPtFv1vWklg+bUFhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\nXUqgCZo8MKeV2jf2drLxRRwRL33SksQbzAQ/qRLdT7GP3sCGqvkvWY2FPdFYf8kx
\nGcCeZPcleZYQCAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpp7dt
\nJ7n8EzkRUNE6aIMHOFEEych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\nniWgTWHXPZxUQaYhpjXo6+IMl6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
\nlS6VjoTkF6r7VZolLXX0fbuXh6lm8K8lQRfBpjff56p9pMwaBpDNDrfpHB5utBU
\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zf3bGSXU/jR4eB
\nlIVQhELGI9CbKsdzKM71GyElmix/T7FnJSHIWIho1qVo6AQyduNWnAQD15prKAd
\nXGXAzz1FQcb3KYa+2fflERmazdOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
\n/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
\nnfl7FPMdvGl8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9o
\nnjHjWB7pQLUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDlKxfciXKcsYrIluk
\nnfaoXgjkR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd
\n3fy+1rCUwzOp9LSjtYf4ege
\n-----END PRIVATE KEY-----",
 "type": "server",
 "update_time": "2017-02-25 09:38:27"
}
```

## Status Code

For details, see [Status Codes](#).

### 10.1.9.5 Deleting a Certificate

#### Function

This API is used to delete a specific certificate.

#### Constraints

If the target certificate is used by a listener, the certificate cannot be deleted, and 409 code will be displayed.

## URI

DELETE /v2.0/lbaas/certificates/{certificate\_id}

**Table 10-207** Parameter description

| Parameter      | Mandatory | Type   | Description                   |
|----------------|-----------|--------|-------------------------------|
| certificate_id | Yes       | String | Specifies the certificate ID. |

## Request

- Request parameters  
None

## Response

- Response parameters  
None

## Example Request

- Example request: Deleting a certificate  
DELETE https://{Endpoint}/v2.0/lbaas/certificates/23ef9aad4ecb463580476d324a6c71af

## Example Response

- Example response 1  
None

## Status Code

For details, see [Status Codes](#).

# 10.2 Asynchronous Job Query (Discarded)

## Function

This API is used to query the execution status of an asynchronous job.

## URI

GET /v1.0/{project\_id}/jobs/{job\_id}

**Table 10-208** Parameter description

| Parameter  | Mandatory | Type   | Description               |
|------------|-----------|--------|---------------------------|
| project_id | Yes       | String | Specifies the project ID. |

| Parameter | Mandatory | Type   | Description                                                                                    |
|-----------|-----------|--------|------------------------------------------------------------------------------------------------|
| job_id    | Yes       | String | Specifies the unique ID assigned to the job for querying the execution status in Combined API. |

Request

None

Response

Table 10-209 Response parameters

| Parameter   | Type                             | Description                                                                                                                                                                                                        |
|-------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| status      | String                           | Specifies the job execution status.<br><b>SUCCESS:</b> The job was successfully executed.<br><b>FAIL:</b> The job failed.<br><b>RUNNING:</b> The job is in progress.<br><b>INIT:</b> The job is being initialized. |
| entities    | <i>Dictionary data structure</i> | Specifies the resource information or error information. The ELB resource ID is used as an example in the response example.                                                                                        |
| job_id      | String                           | Specifies the unique ID assigned to the job for querying the execution status in Combined API.                                                                                                                     |
| job_type    | String                           | Specifies the job type.                                                                                                                                                                                            |
| error_code  | String                           | Specifies the error code.                                                                                                                                                                                          |
| fail_reason | String                           | Specifies the cause of an error.                                                                                                                                                                                   |

Example

- Example request  
None
- Example response

```
{
 "status": "RUNNING",
 "entities":
 {"elb_id": "ea3e5715b68850a747ec41f335625c08"},
 "job_id": "4010b39b4fd3d5ff014fd943bac41619",
```

```
"job_type": "deleteELB",
"begin_time": "2015-09-17T03:05:38.756Z",
"end_time": "",
"error_code": null,
"fail_reason": null
}
```

## Status Code

- Normal  
200
- Error

| Status Code            | Description                                              |
|------------------------|----------------------------------------------------------|
| 400 badRequest         | Request error.                                           |
| 401 unauthorized       | Authentication failed.                                   |
| 403 userDisabled       | You do not have the permission to perform the operation. |
| 404 Not Found          | The requested page does not exist.                       |
| 500 authFault          | System error.                                            |
| 503 serviceUnavailable | The service is unavailable.                              |

## 10.3 Querying Versions (Discarded)

### Function

Queries all available versions.

If there is no version added to the URL, all available versions are returned.

### URI

GET /

### Request

None

### Response

None

### Example

- Example request  
GET /
- Example response

```
{
 "versions": [
 {
 "status": "CURRENT",
 "id": "v2.0",
 "links": [
 {
 "href": "http://192.168.82.231:9696/v2.0",
 "rel": "self"
 }
]
 }
]
}
```

## 10.4 Getting Started

### 10.4.1 Creating a Load Balancer

#### Scenarios

Assume that you have created a VPC and several ECSs on the cloud platform. To ensure high performance and availability of ECSs, a load balancer is required to distribute requests to different backend ECSs.

This section describes how to invoke the API to create a load balancer.

#### NOTE

The validity period of a token obtained from IAM is 24 hours. If you want to use a token for authentication, cache it to avoid frequently calling the IAM API.

#### Involved APIs

If you use a token for authentication, you must obtain the token and add **X-Auth-Token** to the request header of the ELB API when making an API call.

- IAM API used to obtain the token
- ELB API used to create a load balancer

#### Procedure

1. Obtain the token by referring to [Authentication](#).
2. Send **POST https://ELB endpoint/v2.0/lbaas/loadbalancers**.
3. Add **X-Auth-Token** to the request header.
4. Specify the following parameters in the request body:

```
{
 "loadbalancer": {
 "name": "loadbalancer1", //Load balancer name
 "description": "simple lb", //Load balancer description
 "vip_subnet_id": "58077bdb-d470-424b-8c45-2e3c65060a5b", //ID of the IPv4 subnet where the
load balancer works
 "vip_address": "10.0.0.4" //IP address of the load balancer
 }
}
```

If the request is successful, the response body is returned.

If the request fails, an error code and error information are returned. For details, see [Status Codes](#).

## 10.4.2 Obtaining a Token

### Application Scenarios

If you use a token for authentication, you must obtain the token and add **X-Auth-Token** to the request header of the API when making a call.

### Authenticating the Token

**Step 1** Send **POST** <https://IAM endpoint/v3/auth/tokens>. Obtain the Identity and Access Management (IAM) endpoint and region name in the message body.

See [Regions and Endpoints](#).

The following is an example request:

#### NOTE

The italic words in the following example need to be replaced with the actual values. For details, see [Obtaining a User Token](#).

```
{
 "auth": {
 "identity": {
 "methods": [
 "password"
],
 "password": {
 "user": {
 "name": "username",
 "password": "password",
 "domain": {
 "name": "domainname"
 }
 }
 }
 },
 "scope": {
 "project": {
 "name": "aaa"
 }
 }
 }
}
```

**Step 2** Obtain the token. The token is the value of **X-Subject-Token** in the response.

**Step 3** Call a service API, add **X-Auth-Token** to the request header, and set the value of **X-Auth-Token** to the token obtained in [Step 2](#).

----End

## 10.4.3 Creating a Load Balancer

Assume that you have created a Virtual Private Cloud (VPC) and several Elastic Cloud Servers (ECSs) on the cloud platform. To ensure high performance and availability of ECSs, a load balancer is required to distribute requests to different backend ECSs.



## API Format

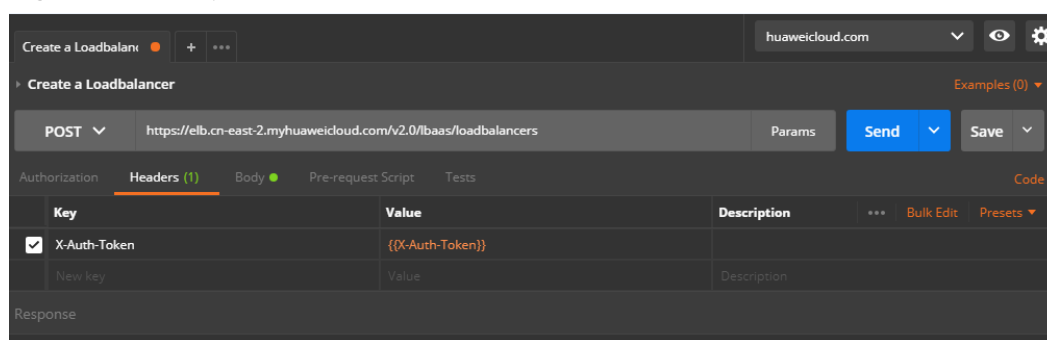
| Method | URI                       | Description              |
|--------|---------------------------|--------------------------|
| POST   | /v2.0/lbaas/loadbalancers | Creates a load balancer. |

## Procedure

### Step 1 Set the request header.

Set the header in Postman and place the obtained token in the header.

**Figure 10-1** Request header

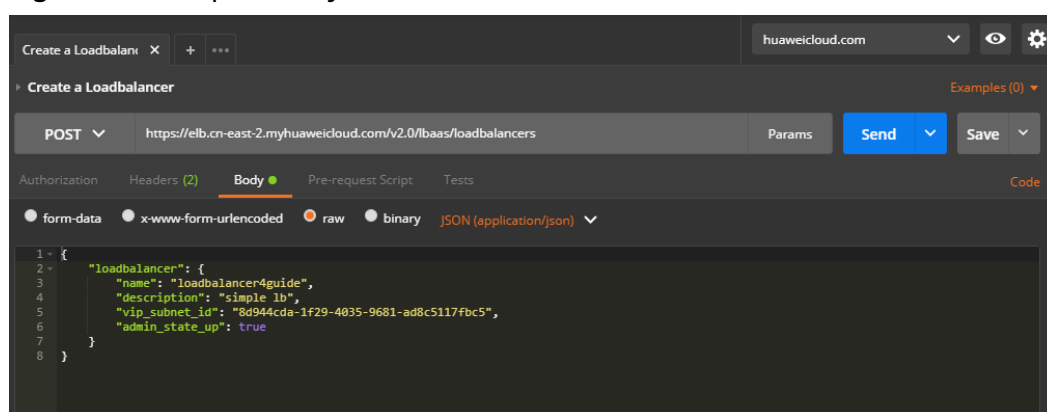


### NOTE

The value of the token can be transferred through an environment variable or directly entered.

### Step 2 Under **Body**, set the request body.

**Figure 10-2** Request body



You can refer to [Sample Code](#) to set the request body, or add other required fields by referring to the Elastic Load Balance API Reference.

### Step 3 Enter the URL.

The request URL consists of the following parts:

| Endpoint |              |             |                    | URI                       |
|----------|--------------|-------------|--------------------|---------------------------|
| https:// | elb          | .cn-north-1 | .myhuaweicloud.com | /v2.0/lbaas/loadbalancers |
| -        | Service name | Region      | Endpoint           | URI                       |

**Step 4** Send the request. Set the POST request method and click **Send** to wait for response from the server.

```
{
 "loadbalancer": {
 "description": "simple lb",
 "admin_state_up": true,
 "tenant_id": "0d0bf0e8fb564cc9abbe526dbdca9248",
 "provisioning_status": "ACTIVE",
 "vip_subnet_id": "8d944cda-1f29-4035-9681-ad8c5117fbc5",
 "listeners": [],
 "vip_address": "192.168.0.144",
 "vip_port_id": "b06bdc8f-cc00-41b4-8aba-280a333342ee",
 "provider": "vlb",
 "pools": [],
 "id": "bb2f1569-4c03-4e48-8e02-a2d831c0db56",
 "operating_status": "ONLINE",
 "name": "loadbalancer4guide"
 }
}
```

If the request is correct, information about the newly created load balancer is displayed. After logging in to the web console, you can see a load balancer named **loadbalancer4guide**.

----End

## Sample Code

Request body in [Step 2](#)

```
{
 "loadbalancer": {
 "name": "loadbalancer1",
 "description": "simple lb",
 "vip_subnet_id": "58077bdb-d470-424b-8c45-2e3c65060a5b",
 "admin_state_up": true
 }
}
```

### NOTE

The value of **vip\_subnet\_id** is the ID of the subnet where the create load balancer works.

## 10.4.4 Creating a Public Network Load Balancer

When an EIP is bound to a private network load balancer, the load balancer becomes a public network load balancer. Clients can access backend servers through this load balancer over Internet.

### Apply for an EIP

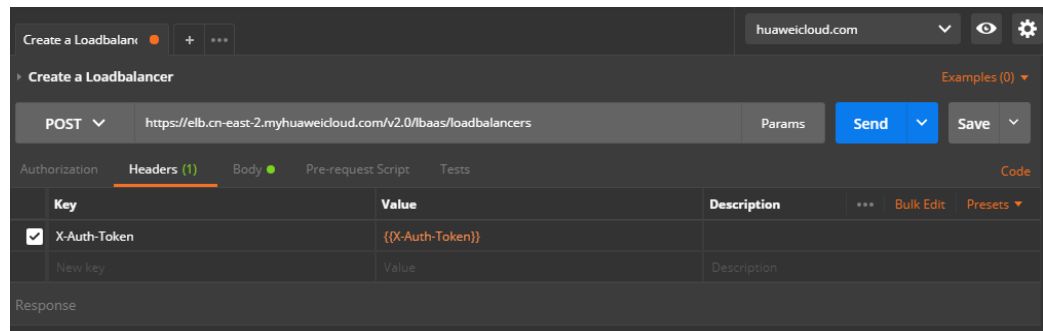
#### API Format

| Method | URI                       | Description         |
|--------|---------------------------|---------------------|
| POST   | /v1/{tenant_id}/publicips | Applies for an EIP. |

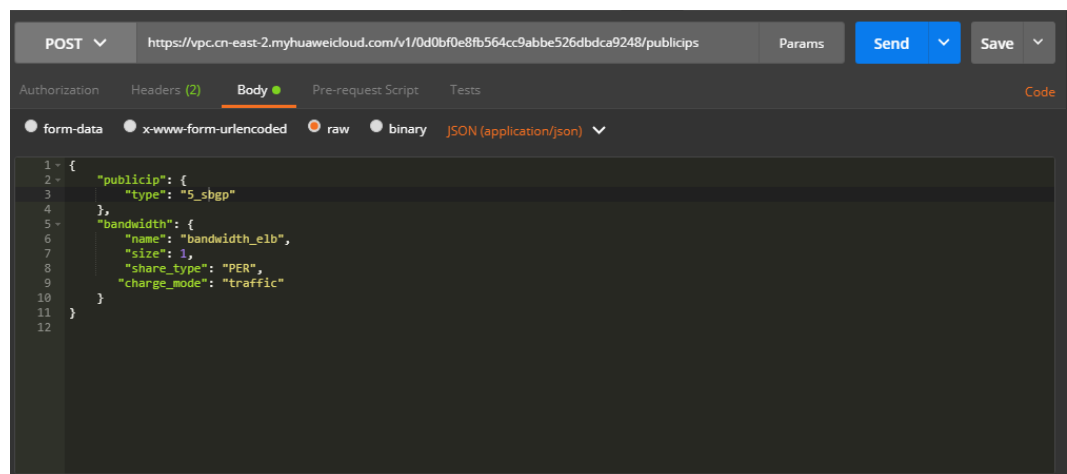
## Procedure

### Step 1 Set the request header.

Set the header in Postman and place the obtained token in the header.



### Step 2 Under **Body**, set the request body.



### Step 3 Enter the URL.

https://vpc.cn-east-2.myhuaweicloud.com/v1/0d0bf0e8fb564cc9abbe526dbdca9248/publicips

### Step 4 Send the request. Set the POST request method and click **Send** to wait for response from the server.

```
{
 "publicip": {
 "id": "73c079fc-357a-4d34-8ba1-818a9d9a2aa2",
 "status": "PENDING_CREATE",
 "type": "5_sbgp",
 "public_ip_address": "122.112.235.121",
 "tenant_id": "0d0bf0e8fb564cc9abbe526dbdca9248",
 "create_time": "2018-07-11 02:40:32",
 "bandwidth_size": 0,
 "enterprise_project_id": "0"
 }
}
```

 NOTE

Note that the value of **tenant\_id** in the response body is the project ID on the web console.

----End

### Sample Code

Request body in [Step 2](#)

```
{
 "publicip": {
 "type": "5_sbgp"
 },
 "bandwidth": {
 "name": "bandwidth_elb",
 "size": 1,
 "share_type": "PER",
 "charge_mode": "traffic"
 }
}
```

 NOTE

For details about fields in the request body and their formats, see the *Virtual Private Cloud API Reference*.

## Bind the EIP

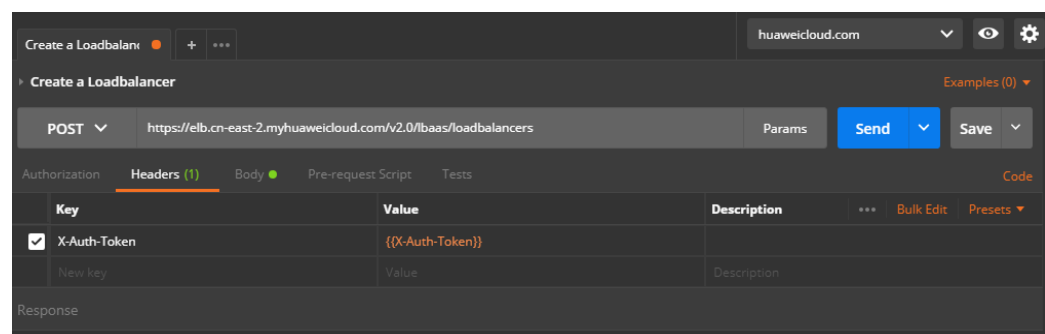
### API Format

| Method | URI                                     | Description                       |
|--------|-----------------------------------------|-----------------------------------|
| PUT    | /v1/{tenant_id}/publicips/{publicip_id} | Binds the EIP to a load balancer. |

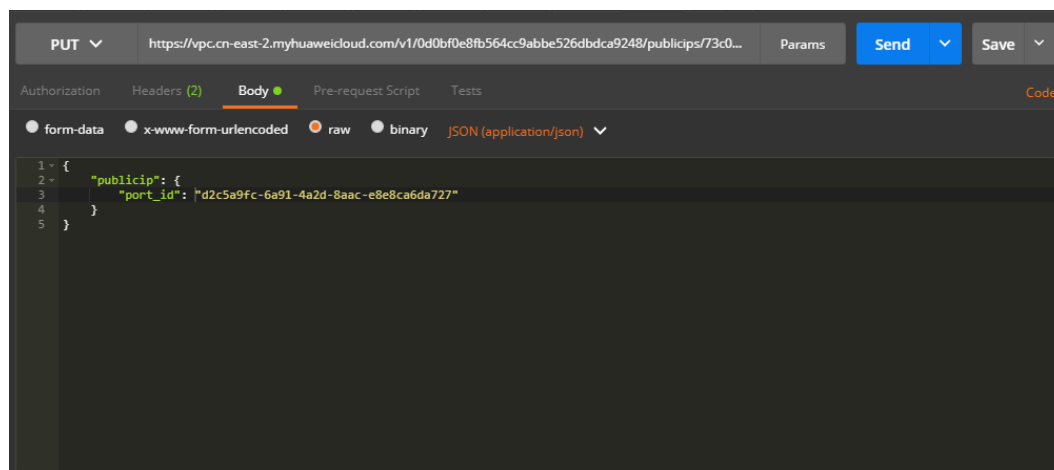
### Procedure

#### Step 1 Set the request header.

Set the header in Postman and place the obtained token in the header.



#### Step 2 Under **Body**, set the request body.



#### NOTE

The value of **port\_id** can be obtained by calling the VPC API. The request is as follows:

```
GET https://vpc.cn-north-1.myhuaweicloud.com/v2.0/ports?network_id=Network
ID&fixed_ips=ip_address=Private IP address of the load balancer
```

Choose **Network > Virtual Private Cloud**, click the target VPC name, and obtain the network ID and private IP address of the load balancer on the subnet details page.

#### Step 3 Enter the URL.

```
https://vpc.cn-east-2.myhuaweicloud.com/v1/{{project_id}}/publicips/{{eip_id}}
```

#### NOTE

**eip\_id** is the ID returned when the EIP is assigned in [Apply for an EIP](#).

#### Step 4 Send the request. Set the PUT request method and click **Send** to wait for response from the server.

```
{
 "publicip": {
 "id": "73c079fc-357a-4d34-8ba1-818a9d9a2aa2",
 "status": "ACTIVE",
 "type": "5_sbgp",
 "port_id": "d2c5a9fc-6a91-4a2d-8aac-e8e8ca6da727",
 "public_ip_address": "122.112.235.121",
 "private_ip_address": "192.168.0.160",
 "tenant_id": "0d0bf0e8fb564cc9abbe526dbdca9248",
 "create_time": "2018-07-11 02:40:32",
 "bandwidth_size": 1
 }
}
```

----End

#### Sample Code

Request body in [Step 2](#)

```
{
 "publicip": {
 "port_id": "d2c5a9fc-6a91-4a2d-8aac-e8e8ca6da727"
 }
}
```

## 10.4.5 Adding a Listener

### API Format

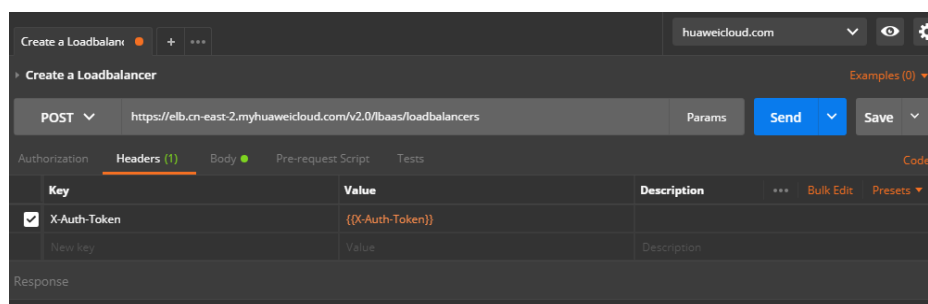
| Method | URI                   | Description      |
|--------|-----------------------|------------------|
| POST   | /v2.0/lbaas/listeners | Adds a listener. |

### Constraints

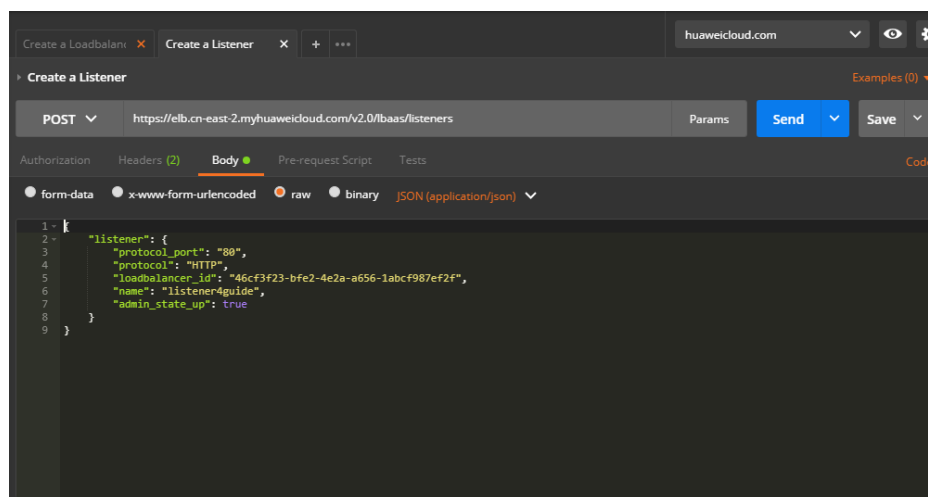
Each listener added a load balancer can listen on only one port.

### Procedure

- Step 1** Set the request header. Set the header in Postman and place the obtained token in the header.



- Step 2** Under **Body**, set the request body.



- Step 3** Enter the URL.

https://elb.cn-east-2.myhuaweicloud.com/v2.0/lbaas/listeners

- Step 4** Send the request. Set the POST request method and click **Send** to wait for response from the server.

```
{
 "listener": {
 "protocol_port": 80,
```

```
{
 "protocol": "HTTP",
 "description": "",
 "default_tls_container_ref": null,
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "abe3ee34-1882-408f-a2ba-1ce7e428d6e3"
 }
],
 "tenant_id": "0d0bf0e8fb564cc9abbe526dbdca9248",
 "sni_container_refs": [],
 "connection_limit": -1,
 "default_pool_id": null,
 "id": "779d77c8-f3f9-486d-a598-18e2aa2aa319",
 "name": "listener4guide"
}
```

----End

## Sample Code

Request body in [Step 2](#)

```
{
 "listener": {
 "protocol_port": "80",
 "protocol": "HTTP",
 "loadbalancer_id": "abe3ee34-1882-408f-a2ba-1ce7e428d6e3",
 "name": "listener4guide",
 "admin_state_up": true
 }
}
```

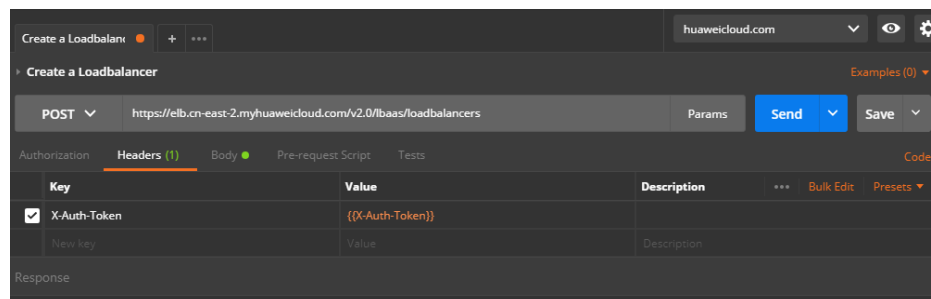
## 10.4.6 Creating a Backend Server Group

### API Format

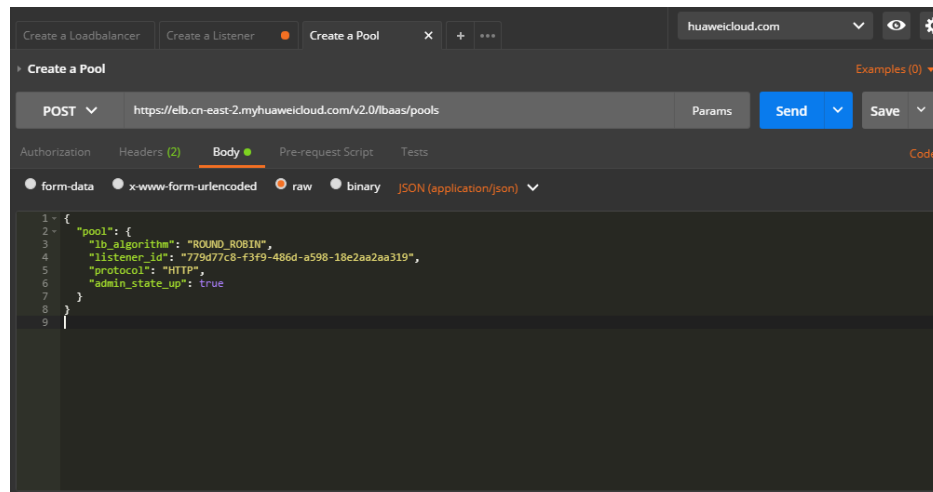
| Method | URI               | Description                  |
|--------|-------------------|------------------------------|
| POST   | /v2.0/lbaas/pools | Adds a backend server group. |

### Procedure

- Step 1** Set the request header. Set the header in Postman and place the obtained token in the header.



**Step 2** Under **Body**, set the request body.



**Step 3** Enter the URL.

`https://elb.cn-east-2.myhuaweicloud.com/v2.0/lbaas/pools`

**Step 4** Send the request. Set the POST request method and click **Send** to wait for response from the server.

```
{
 "pool": {
 "lb_algorithm": "ROUND_ROBIN",
 "protocol": "HTTP",
 "description": "",
 "admin_state_up": true,
 "loadbalancers": [
 {
 "id": "abe3ee34-1882-408f-a2ba-1ce7e428d6e3"
 }
],
 "tenant_id": "0d0bf0e8fb564cc9abbe526dbdca9248",
 "session_persistence": null,
 "healthmonitor_id": null,
 "listeners": [
 {
 "id": "ecb4d58e-3b09-4a9d-9ad2-159b21e13f83"
 }
],
 "members": [],
 "id": "752c3773-a046-4966-a5d6-0ad7f9a49d0a",
 "name": ""
 }
}
```

----End

## Sample Code

Request body in [Step 2](#)

```
{
 "pool": {
 "lb_algorithm": "ROUND_ROBIN",
 "listener_id": "{{listener_id}}",
 "protocol": "HTTP",
 "admin_state_up": true
 }
}
```



## 10.4.7 Adding Backend Servers

### API Format

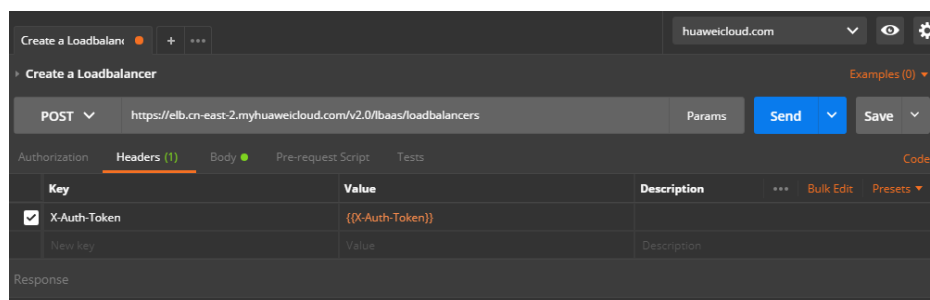
| Method | URI                                 | Description                                                 |
|--------|-------------------------------------|-------------------------------------------------------------|
| POST   | /v2.0/lbaas/pools/{pool_id}/members | Adds backend servers that belong to a backend server group. |

### Constraints

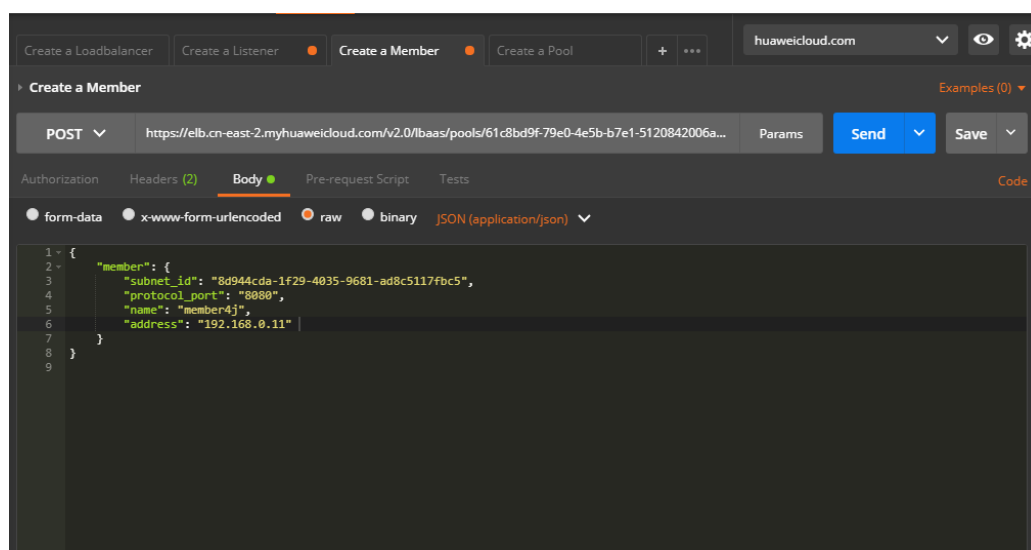
- Two backend servers in the same backend server group must have different IP addresses and ports.
- The subnet specified during server creation and the subnet to which the virtual IP address belongs must be in the same VPC.
- The value of **admin\_state\_up** must be **true**.

### Procedure

- Step 1** Set the request header. Set the header in Postman and place the obtained token in the header.



- Step 2** Under **Body**, set the request body.



**Step 3** Query the subnet ID and primary NIC IP address of the VM.

The URL is as follows:

```
GET https://{VPCEndpoint}/v2.0/ports?device_id={ecs_id}
```

Obtain the values of **subnet\_id** and **ip\_address** of the port for which **primary\_interface** is **true** from the response body. The following is an example of the response body:

```
{
 "ports": [
 {
 "id": "4813697b-62ba-4f4b-90e5-13bbbdec7198",
 "name": "",
 "status": "ACTIVE",
 "admin_state_up": true,
 "fixed_ips": [
 {
 "subnet_id": "d97b6b89-6aa2-4636-a86b-132eb4eb566e",
 "ip_address": "10.1.1.89"
 }
],
 "mac_address": "fa:16:3e:cb:8d:0a",
 "network_id": "1b76b9c2-9b7e-4ced-81bd-d13f7389d7c9",
 "tenant_id": "04dd36f978800fe22f9bc00bea090736",
 "project_id": "04dd36f978800fe22f9bc00bea090736",
 "device_id": "f738c464-b5c2-45df-86c0-7f436620cd54",
 "device_owner": "compute:cn-north-4a",
 "security_groups": [
 "7a233393-5be2-4dff-8360-1558dd950f6e"
],
 "extra_dhcp_opts": [],
 "allowed_address_pairs": [],
 "binding:vnic_type": "normal",
 "binding:vif_details": {},
 "binding:profile": {},
 "port_security_enabled": true,
 "created_at": "2019-11-19T09:28:38",
 "updated_at": "2019-11-19T09:28:39"
 },
 {
 "id": "94971c39-46f0-443a-85e8-31cb7497c78e",
 "name": "",
 "status": "ACTIVE",
 "admin_state_up": true,
 "fixed_ips": [
 {
 "subnet_id": "8d944cda-1f29-4035-9681-ad8c5117fbc5",
 "ip_address": "192.168.0.11"
 }
],
 "mac_address": "fa:16:3e:5c:d2:57",
 "network_id": "1b76b9c2-9b7e-4ced-81bd-d13f7389d7c9",
 "tenant_id": "04dd36f978800fe22f9bc00bea090736",
 "project_id": "04dd36f978800fe22f9bc00bea090736",
 "device_id": "f738c464-b5c2-45df-86c0-7f436620cd54",
 "device_owner": "compute:cn-north-4a",
 "security_groups": [
 "a10dfc31-0055-4b84-b36e-1291b918125c",
 "7a233393-5be2-4dff-8360-1558dd950f6e"
],
 "extra_dhcp_opts": [],
 "allowed_address_pairs": [],
 "binding:vnic_type": "normal",
 "binding:vif_details": {
 "primary_interface": true
 },
 "binding:profile": {}
 }
]
}
```

```
 "port_security_enabled": true,
 "created_at": "2019-11-12T17:17:51",
 "updated_at": "2019-11-12T17:17:51"
 }
]
}
```

**Step 4** Enter the URL.

`https://{ELBEndpoint}/v2.0/lbaas/pools/{pool_id}/members`

**Step 5** Send the request. Set the values of **subnet\_id** and **ip\_address** to these obtained in [Step 3](#), select POST as the request method, and click **Send**.

```
{
 "member": {
 "name": "member4j",
 "weight": 1,
 "admin_state_up": false,
 "subnet_id": "8d944cda-1f29-4035-9681-ad8c5117fbc5",
 "tenant_id": "0d0bf0e8fb564cc9abb526dbdca9248",
 "address": "192.168.0.11",
 "protocol_port": 8080,
 "id": "97f18d73-e97d-434c-8cb7-3274a83dda73",
 "operating_status": "ONLINE"
 }
}
```

----End

## Sample Code

Request body in [Step 2](#)

```
{
 "member": {
 "subnet_id": "8d944cda-1f29-4035-9681-ad8c5117fbc5",
 "protocol_port": "8080",
 "name": "member4j",
 "address": "192.168.0.11"
 }
}
```

## 10.4.8 Configuring a Health Check

### API Format

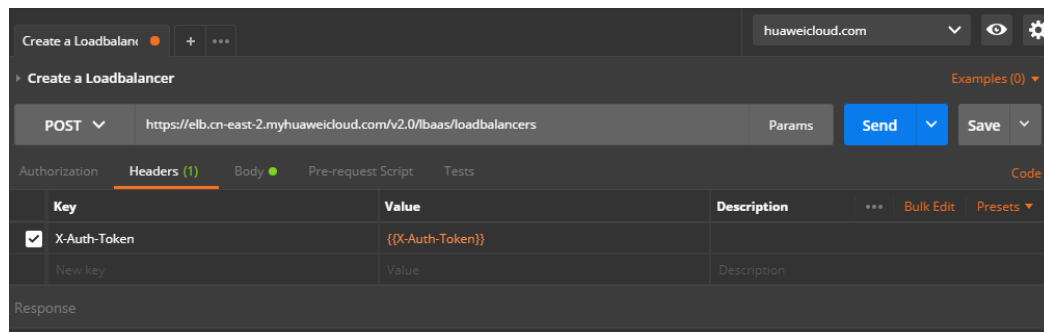
| Method | URI                            | Description                   |
|--------|--------------------------------|-------------------------------|
| POST   | /v2.0/lbaas/<br>healthmonitors | Configures a health<br>check. |

### Constraints

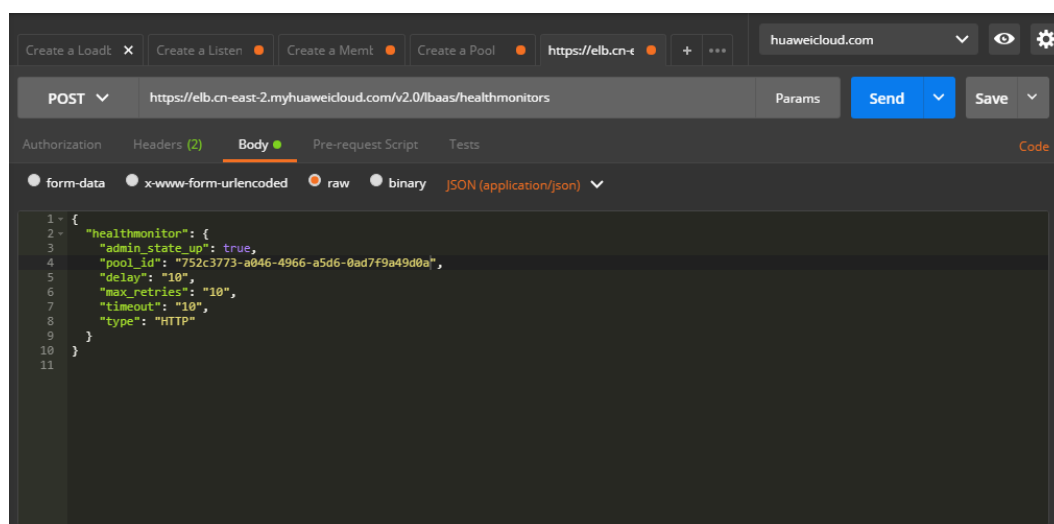
- The security group must have rules to allow access from the 100.125.0.0/16 network segment.
- The value of **admin\_state\_up** must be **true**.
- To use UDP for health checks, the backend server group must use UDP as backend protocol.

## Procedure

- Step 1** Set the request header. Set the header in Postman and place the obtained token in the header.



- Step 2** Under **Body**, set the request body.



- Step 3** Enter the URL.

<https://elb.cn-east-2.myhuaweicloud.com/v2.0/lbaas/healthmonitors>

- Step 4** Send the request. Set the POST request method and click **Send** to wait for response from the server.

```
{
 "healthmonitor": {
 "monitor_port": null,
 "name": "",
 "admin_state_up": true,
 "tenant_id": "0d0bf0e8fb564cc9abbe526dbdca9248",
 "delay": 10,
 "expected_codes": "200",
 "max_retries": 10,
 "http_method": "GET",
 "timeout": 10,
 "pools": [
 {
 "id": "752c3773-a046-4966-a5d6-0ad7f9a49d0a"
 }
],
 "url_path": "/",
 "type": "HTTP",
 }
}
```

```
 "id": "9b6d7438-a6eb-4d49-ae77-3c130e3b7ae8"
 }
}
```

----End

## Sample Code

Request body in [Step 2](#)

```
{
 "healthmonitor": {
 "admin_state_up": true,
 "pool_id": "752c3773-a046-4966-a5d6-0ad7f9a49d0a",
 "delay": "10",
 "max_retries": "10",
 "timeout": "10",
 "type": "HTTP"
 }
}
```

## 10.4.9 Adding a Forwarding Policy

### API Format

| Method | URI                    | Description               |
|--------|------------------------|---------------------------|
| POST   | /v2.0/lbaas/l7policies | Adds a forwarding policy. |

## Application Scenarios

By adding forwarding policies and rules, you can forward different requests to a specific backend server.

Suppose that you have several servers on the cloud platform to provide services for the Internet, and the resources mainly include music (/music/{music\_id}), images (/pic/{pic\_id}), and files (/file/{file\_id}). If there are no forwarding policies, each backend server has a copy of all resources. Requests from a client are always distributed to only one backend server. Therefore, only one copy is used. The storage cost increases as there are more and more backend servers.

Forwarding policies and rules provided by ELB can well solve this problem. In this way, the storage cost is reduced and you can obtain better economic benefits.

## Constraints

- Forwarding policies can be added for listeners when **protocol** is set to **HTTP** or **TERMINATED\_HTTPS**.
- The value of **redirect\_pool** configured for the forwarding policy cannot be the same as that of **default\_pool** configured for the listener.
- The backend server group specified in **redirect\_pool** cannot be used by forwarding policies of other listeners.

## Scenario Assumption

Assume that you have created a load balancer named **loadbalancer\_1**. You can add a listener named **listener\_1** and three backend server groups **pool\_1**, **pool\_2**, and **pool\_3**. **pool\_1** is the default backend server group of **listener\_1**, and **pool\_2** and **pool\_3** are associated with **loadbalancer\_1**. For better load distribution, HTTP requests whose URI starts with **/music** are sent to **pool\_2**, and HTTP requests whose URI starts with **/pic** are forwarded to **pool\_3**.

## Procedure

To match the URIs, HTTP messages need to be parsed. Therefore, the listener and three backend server groups must use the HTTP or HTTPS protocol.

### Step 1 Add an HTTP listener named **listener\_1**.

```
POST https://elb.cn-east-2.myhuaweicloud.com/v2.0/lbaas/listeners
{
 "listener": {
 "protocol_port": "80",
 "protocol": "HTTP",
 "loadbalancer_id": "abe3ee34-1882-408f-a2ba-1ce7e428d6e3",
 "name": "listener_1",
 "admin_state_up": true
 }
}
```

### Step 2 Add a backend server group named **pool\_1** and its backend protocol is HTTP.

```
POST https://elb.cn-east-2.myhuaweicloud.com/v2.0/lbaas/pools/
{
 "pool": {
 "name": "pool_1",
 "lb_algorithm": "ROUND_ROBIN",
 "listener_id": "a7b996cf-23ec-4c0b-b310-45495d29f80c",
 "protocol": "HTTP",
 "admin_state_up": true
 }
}
```

### Step 3 Add a backend server group named **pool\_2** and its backend protocol is HTTP.

```
POST https://elb.cn-east-2.myhuaweicloud.com/v2.0/lbaas/pools/
{
 "pool": {
 "name": "pool_2",
 "lb_algorithm": "ROUND_ROBIN",
 "listener_id": "a7b996cf-23ec-4c0b-b310-45495d29f80c",
 "protocol": "HTTP",
 "admin_state_up": true
 }
}
```

### Step 4 Add a backend server group named **pool\_3** and its backend protocol is HTTP.

```
POST https://elb.cn-east-2.myhuaweicloud.com/v2.0/lbaas/pools/
{
 "pool": {
 "name": "pool_3",
 "lb_algorithm": "ROUND_ROBIN",
 "listener_id": "a7b996cf-23ec-4c0b-b310-45495d29f80c",
 "protocol": "HTTP",
 "admin_state_up": true
 }
}
```

### Step 5 Add a forwarding policy to **pool\_2**.

```
POST https://elb.cn-east-2.myhuaweicloud.com/v2.0/lbaas/l7policies
{
 "l7policy": {
 "action": "REDIRECT_TO_POOL",
 "listener_id": "a7b996cf-23ec-4c0b-b310-45495d29f80c",
 "redirect_pool_id": "b9a01911-8364-44d8-ab5a-4f635820edb2",
 "name": "l7policy_music",
 "admin_state_up": true
 }
}
```

**Step 6** Add a forwarding policy to **pool\_3**.

```
POST https://elb.cn-east-2.myhuaweicloud.com/v2.0/lbaas/l7policies
{
 "l7policy": {
 "action": "REDIRECT_TO_POOL",
 "listener_id": "a7b996cf-23ec-4c0b-b310-45495d29f80c",
 "redirect_pool_id": "3a9b8338-3086-4acc-92e6-83c5e750e44a",
 "name": "l7policy_pic",
 "admin_state_up": true
 }
}
```

**Step 7** Check the created forwarding policies. They do not match any request because there are no specific forwarding rules. To make the forwarding policies to take effect, forwarding rules must be added to forward requests with different URIs.

----End

## 10.4.10 Adding a Forwarding Rule

### API Format

| Method | URI                                        | Description             |
|--------|--------------------------------------------|-------------------------|
| POST   | /v2.0/lbaas/l7policies/{l7policy_id}/rules | Adds a forwarding rule. |

### Constraints

The type of forwarding rules for the same forwarding policy cannot be the same.

### Procedure

**Step 1** Set the request header. Set the header in Postman and place the obtained token in the header.

**Step 2** Create a forwarding rule for the request whose name starts with **/music**.

```
POST https://elb.cn-east-2.myhuaweicloud.com/v2.0/lbaas/l7policies/5b94fb42-
b018-4ad6-9ba6-0e8a509c6821/rules
{
 "rule": {
 "compare_type": "STARTS_WITH",
 "type": "PATH",
 "value": "/music"
 }
}
```

**Step 3** Create a forwarding rule for the request whose name starts with `/pic`.

```
POST https://elb.cn-east-2.myhuaweicloud.com/v2.0/lbaas/l7policies/
f6c5862d-460c-4ab6-8dc7-2294df442f67/rules
{
 "rule": {
 "compare_type": "STARTS_WITH",
 "type": "PATH",
 "value": "/pic"
 }
}
```

**Step 4** Check the created forwarding rules on the web console.

-----End

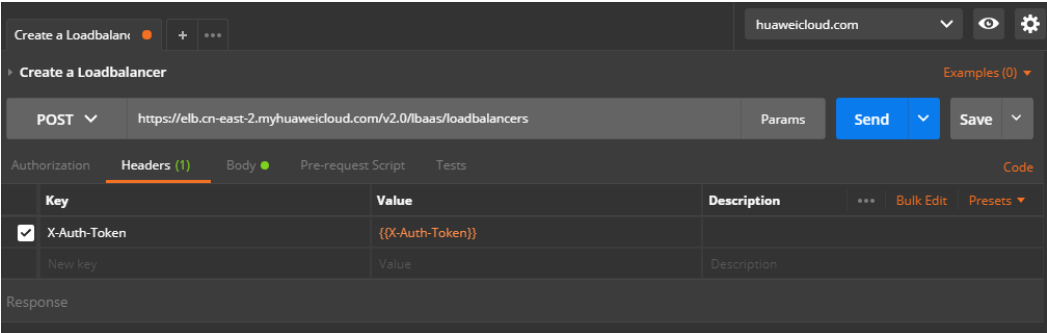
10.4.11 Adding a Whitelist

API Format

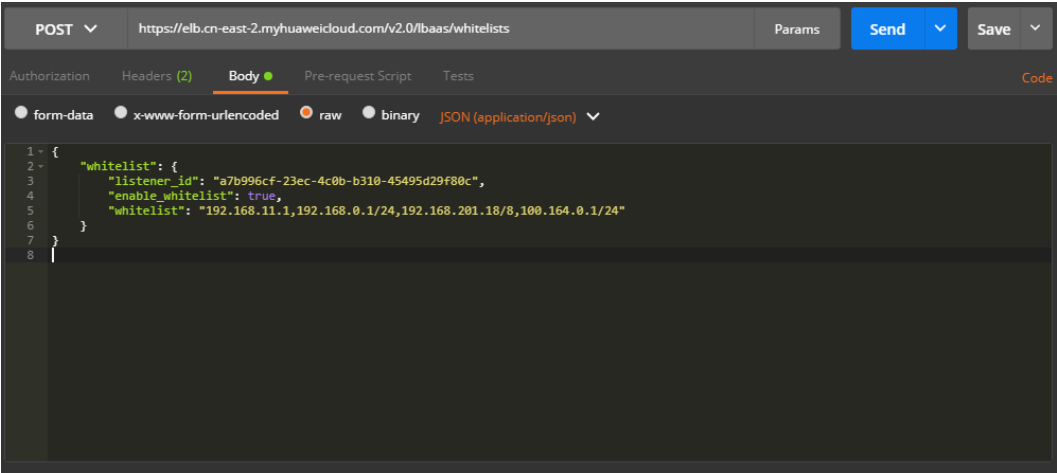
| Method | URI                    | Description       |
|--------|------------------------|-------------------|
| POST   | /v2.0/lbaas/whitelists | Adds a whitelist. |

Procedure

**Step 1** Set the request header. Set the header in Postman and place the obtained token in the header.



**Step 2** Under **Body**, set the request body.





**Step 3** Enter the URL.

```
https://elb.cn-east-2.myhuaweicloud.com/v2.0/lbaas/whitelists
```

**Step 4** Send the request.

Set the POST request method and click **Send** to wait for response from the server.

```
{
 "whitelist": {
 "tenant_id": "0d0bf0e8fb564cc9abbe526dbdca9248",
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24",
 "enable_whitelist": true,
 "id": "317a0ea1-e47b-4e8b-996f-0556270245c3",
 "listener_id": "a7b996cf-23ec-4c0b-b310-45495d29f80c"
 }
}
```

----End

## Sample Code

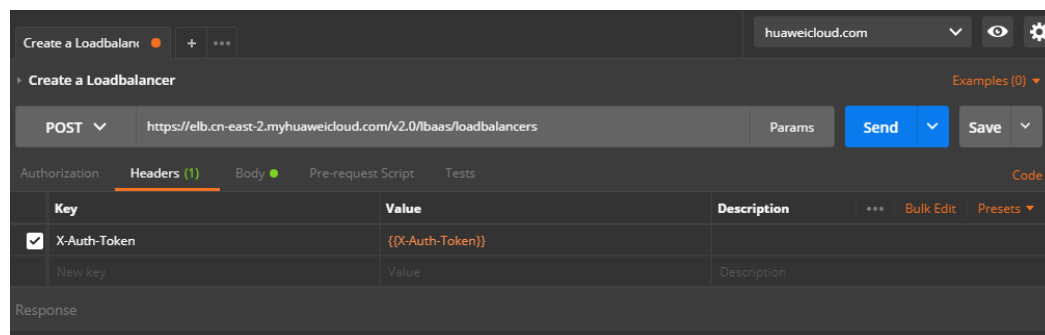
Request body in [Step 2](#)

```
{
 "whitelist": {
 "listener_id": "a7b996cf-23ec-4c0b-b310-45495d29f80c",
 "enable_whitelist": true,
 "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
 }
}
```

## 10.4.12 Creating an SSL Certificate

**Step 1** Set the request header.

Set the header in Postman and place the obtained token in the header.

**Step 2** Under **Body**, set the request body.

[illegible]

### Step 3 Enter the URL.

<https://elb.cn-east-2.myhuaweicloud.com/v2.0/lbaas/certificates>

**Step 4** Send the request. Set the POST request method and click **Send** to wait for response from the server.

```
{
 "update_time": "2018-07-11 02:10:05",
 "private_key": "-----BEGIN RSA PRIVATE KEY-----
\nMIIeEowIBAAKCAQEAwZ5UJULajWr7p6FVwGRQRjFN2s8tZ/6LC3X82fajpVsYqF1x
\nqEuUDndDXVD09E4u843M56HO6a3blVQDp6/
klnYldiE6Vp8HH5BSKaCWKVg8lGWg1\nUm9wZFnlryi14KgmpIFmcu9nA8yV/
6MZAe6RSDmb3iyNBmiZ8a2hGw2p1lYwR+15\nMVqFFGB+7ExkziROI7L8CFCyCezK2/
oOOvQsH1dzQ8z1JXWdg8/9Zx7Ktvgwu5PQ
\nM3cJtSHX6iBP0KMU8Z8TugLITqQXKZOEgwajwvQ5mf2DPkVgM08XAgALJcLigwD5\n1n3koAdtJd5v+9irw
+5LAuO3JclqWTVwy7u/YwwIDAQABAolBACU9S5fjD9/jTMTXA\nnDRs08A+gGgZUxLn0xk
+NAPX3LyB1tfdkCaFB8BccLzO6h3KZuwQOBpv6jkdVEDbx\nnNwyw3eA/
9GJslvKiHc0rejdyvPymaw9l8MA7NbXHaJrY7KpqDQyk6sx+aUTcy5Jg\nniMXLWdwXYHhJ/
1HVo0603oZyi56HZeYU089NDUcX+1SjI3e5KeGdPVXEgCq1O11\n/nrh24bMxnxZo4PKBWdcMBN5Zf/4ij9vrZE
+ffzW7vGBO48A5lvZxWU2U5t/0ZQRtN
\n1uLOHmMFa0FIF2aWbTVfwdUkAFsvAOkHj9VV8BXOUwKOUuEktdkfAlvrXmsFrO/H\nnyDeYYPkCgYEA/
S55CBbR0sMXpSZ56uRn8JHApZJhgkgvYr+FqDUUq/e92nAzf01P\nnRoEBUajwrnf1ycevN/
SDfbtWzq2XJGqhWdJmtpO16b7KBsC6BdRcH6dnOYh31jgA
\nnvABMIP3wzl4zSVTyxRE8LDuboytF1mScEv5tHYPQTZNwrpLDnLQhywcCgYEAw8Yc\nnUk/eiFr3hfH/
ZohMfv5p82Qp7DNIGRzw8YtVG/3+vNXrAXW1VhugNhQY6L+zLTJC
\nnaK840ooup0m3YCg0hviNqJuvzfuszQgtjTYxaE0cEwsjUusOmijU09vVx/3U7siK
\nnHdj2lCPCvQ6Q8tdi8jV320gMs05AtaBkZdsiWUCgYEAAtLw4Kk4f+XTKDFsrLUNf
\nn75wqcqhWVBiwBp7yQ7UX4EYsPKZcHMRTk0EEcAbpyajZE3l44vjP5ReXIHNLmFps
\nnuvl34J4Rfot0LN3n7cFAi2+wpNo+MOBwrNzpRmijGP2uKkrq4JiMjFbKV/6utGF
\nnUp7VxfwS904JypqGaZctilECgYA1A6nZtF0riY6ry/uAdXpZHL8ONNqRZtWoT0kD
\nn79otSVu5lSiRbaGcXsDExC52oKrSDAgFtbqQUiEOFG09UcXfRoR6HwRkba2CiDwve
\nnyHQLQl5Qrdxz8Mk0glrNrSM4FamcW9vi9z4kCbQyoC5C+4gqeUURpDlKBWP2Y4\nn2ct/
bQKBGhV8qCsQTZphOxc31BJPa2xVhuv18cEU3XLUrVfUZ/1f43JhLp7gynS2\nnep+
+LKUi9D0VGXY8bqvJfjBECeCeU85vl8NpCXwe/LoVoln+7KaVIZMwqoGmGfNl\nnnEqm7HWkNxHhf8A6En/
JleuddS1sf9e/x+TJN1Xhnt9W6pe7Fk1\nn-----END RSA PRIVATE KEY-----",
 "id": "e3c066329baa4a90bfebe13ec3d3cb8c",
 "name": "https_certificate",
 "domain": "www.elb.com",
 "description": "description for certificate",
 "tenant_id": "0d0bf0e8fb564cc9abbe526dbdca9248",
 "create_time": "2018-07-11 02:10:05".
}
```

```
"certificate": "-----BEGIN CERTIFICATE-----
\nMIIDpTCCAo2gAwIBAgIJAKdmmOBYnFvoMA0GCSqGSIb3DQEBCwUAMGkxCzAJBgNV
\nBAYTAnh4MQswCQYDVQQLDAJ4eDELMAkGA1UEBwwCeHgxGzAJBgNVBAAoManh4MQsw
\nCQYDVQQLDAJ4eDELMAkGA1UEAwwCeHgxGTAXBgkqhkiG9w0BQCQEWCh4QDE2My5j
\nb20wHhcNMTcxMjA0MDM0MjQ5WWhcNMjAxMjAzMDM0MjQ5WjBpMQswCQYDVQQLGwJ4\neDELMAkGA
1UECAwCeHgxGzAJBgNVBAAcManh4MQswCQYDVQQLDAJ4eDELMAkGA1UE
\nCwwCeHgxGzAJBgNVBAMMAnh4MRkwFwYJKoZIhvcNAQkBFgp4eEAXNjMuY29tMIIIB
\nljANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAwZ5UJULajWr7p6FVwGRQRjFN\n2s8tZ/
6LC3X82fajpVsYqF1xqEuUDndDXVD09E4u83MS6HO6a3bIVQDp6/klnYld
\nniE6Vp8HH5BSKaCWKVg8IGWg1UM9wZFnlryi14KgmpIFmCu9nA8yV/6MZAe6RSDmb
\n3iyNBmiZ8aZhGw2pl1YwR+15MVqFFGB+7ExkziROI7L8CFCyCezK2/oOOvQsH1dz
\nQ8z1JXWdg8/9Zx7Ktvgwu5PQM3cjtSHX6iBPokMU8Z8TugLLtqQXKZOEGwajwvQ5\nnmf2DPkVgM08XAgALJcligwD513koAdtJd5v+9irw+5LAuO3JclqwTwwy7u/YwwID\nnAQABo1AwTjAdBgNVHQ4EFgQUo5A2tlU
+bcUfvGTD7wmEkhXKFjcwHwYDVR0jBBgw\nnFoAUo5A2tlU
+bcUfvGTD7wmEkhXKFjcwDAYDVR0TBAAUwAwEB/zANBgkqhkiG9w0B
\nAQsFAAOCAQEAwJ2rS6Mvlqk3GfEpboez2J3X7l1z8Sxoqg6ntwB+rezvK3mc9H0\nn83qcVeUcoH
+OA0IShyFN4FvRQL6X1hEheHarYwJK4agb231vb5erasuGO463eYEG\nnr4SfTuOm7SviY2xxbaBKrXJtpBp4WLL/s
+LF+nklKjaOxmXUX0sM4CTA7uFJypY\nc8Tdr8lDDNqoUtMD8BrUCji+7lmMXRcC3Qi3oZJW76ja
+kZA5mKVFPd1ATih8TbA\nni34R7EQDtFeiSvBdeKRSPp8c0KT8H1B4IXNkkCQs2W5Xp4lm99+ZtLD4glw8x6lc
\ni1YhgnQbn5E0hz55OLu5jvOkKQjPCW+8Kg==\n-----END CERTIFICATE-----",
"type": "server"
}
```

----End

## Sample Code

Request body in [Step 2](#)

```
{
 "name": "https_certificate",
 "description": "description for certificate",
 "type": "server",
 "domain": "www.elb.com",
 "private_key": "-----BEGIN RSA PRIVATE KEY-----
\nMIIEowIBAAKCAQEAwZ5UJULajWr7p6FVwGRQRjFN2s8tZ/6LC3X82fajpVsYqF1x
\nqEuUDndDXVD09E4u83MS6HO6a3bIVQDp6/
klnYldiE6Vp8HH5BSKaCWKVg8IGWg1\nUM9wZFnlryi14KgmpIFmCu9nA8yV/
6MZAe6RSDmb3iyNBmiZ8aZhGw2pl1YwR+15\nMVqFFGB+7ExkziROI7L8CFCyCezK2/
oOOvQsH1dzQ8z1JXWdg8/9Zx7Ktvgwu5PQ
\nM3cjtSHX6iBPokMU8Z8TugLLtqQXKZOEGwajwvQ5mf2DPkVgM08XAgALJcligwD5\nn13koAdtJd5v+9irw
+5LAuO3JclqwTwwy7u/YwwIDAQABAolBACU9S5fjD9/jTMA\nnDRs08A+gGgZUxLn0xk
+NAPX3LyB1tfdkCaFB8BccLzO6h3KZuwQOBPv6jkdvEDbx\nnNwyw3eA/
9GJslvKiHc0rejdvyPymaw9I8MA7NbXHaJrY7KpqDQyk6sx+aUTcy5jg\nniMXLWdwXYHhJ/
1HVOo603oZyiS6HZeYU089NDUCx+1Sji3e5Ke0gPVXEqCq1O11\n\nnrh24bMxmwZo4PKBWdcMBN5Zf/4ij9vrZE
+fFzW7vGBO48A5lvZxWU2U5t/OZQRtN
\n1uLOHmMFA0FIF2aWbTVfwdUWAFsvAOkHj9VV8BXOUwKOuUektdkfAlvrXmsFrO/H\n\nnyDeYYPkCgYEA/
S55CBbR0sMXP5Z56uRn8JHApZJhgkgvYr+FqDUq/e92nAzf01P\n\nRoEBUajwrnf1ycevN/
SDfbtWzq2XJGqhWdJmtpO16b7KBsC6BdRcH6dnOYh31jgA
\nnvABMIP3wzl4zSVTyxRE8LDuboytF1mSCeV5tHYPQTZNwrPlDnLQhywcCgYEAw8Yc\n\nnUk/eiFr3hfH/
ZohMfV5p82Qp7DNIGRzw8YtVG/3+vNXrAXW1VhugNhQY6L+zLtlC
\nhNk84ooup0m3YCg0hvlNqJuvzfsuzQgtjTXyaE0cEwsjUusOmiuj09vVx/3U7siK
\nnaJd2ICPCvQ6Q8tdi8jV320gMs05AtaBkZdsiWUCgYEAtLw4Kk4f+xTKDFsrLUNf
\n75wcqhWVBiwBp7yQ7UX4EysJPKZcHMRTk0EEcAbpyaJZE3l44vjp5ReXIHNLmfPs
\nnuv134J4Rfot0LN3n7cFrAi2+wpNo+MOBwrNzpRmijGP2uKKRq4JiMjFbKV/6utGF
\nUp7VxfvS904JYpGgAZctiIECgYA1A6nZtF0riY6ry/uAdXpZHL8ONNqRZtWoT0kD
\n79otSVu5ISiRbaGcXsDExC52oKrSDAgFtbqQUiEOFG09UCXf0R6HwRkba2CiDwve
\nnyHQLQI5Qrdxz8Mk0glrNrSM4FamcW9vi9z4kCbQyoC5C+4gqeUURpDlkQBWp2Y4\n\nn2ct/
bQKBgHv8qCsQTZphOxc31BJPa2xVhuv18cEU3XLURvFUZ/1f43JhLp7gynS2\n\nnep+
+LKUi9D0VGXY8bqvFjJBECeCeu85vl8NpCXwe/LoVoln+7KaVIZMwqoGMfgNL\n\nnnEqm7HWkNxBHf8A6En/
Ijleudd5sf9e/x+TJN1Xhnt9W6pe7Fk1\n\n-----END RSA PRIVATE KEY-----",
 "certificate": "-----BEGIN CERTIFICATE-----
\nMIIDpTCCAo2gAwIBAgIJAKdmmOBYnFvoMA0GCSqGSIb3DQEBCwUAMGkxCzAJBgNV
\nBAYTAnh4MQswCQYDVQQLDAJ4eDELMAkGA1UEBwwCeHgxGzAJBgNVBAAoManh4MQsw
\nCQYDVQQLDAJ4eDELMAkGA1UEAwwCeHgxGTAXBgkqhkiG9w0BQCQEWCh4QDE2My5j
\nb20wHhcNMTcxMjA0MDM0MjQ5WWhcNMjAxMjAzMDM0MjQ5WjBpMQswCQYDVQQLGwJ4\neDELMAkGA
1UECAwCeHgxGzAJBgNVBAAcManh4MQswCQYDVQQLDAJ4eDELMAkGA1UE
\nCwwCeHgxGzAJBgNVBAMMAnh4MRkwFwYJKoZIhvcNAQkBFgp4eEAXNjMuY29tMIIIB
\nljANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAwZ5UJULajWr7p6FVwGRQRjFN\n2s8tZ/
6LC3X82fajpVsYqF1xqEuUDndDXVD09E4u83MS6HO6a3bIVQDp6/klnYld
\nniE6Vp8HH5BSKaCWKVg8IGWg1UM9wZFnlryi14KgmpIFmCu9nA8yV/6MZAe6RSDmb
\n3iyNBmiZ8aZhGw2pl1YwR+15MVqFFGB+7ExkziROI7L8CFCyCezK2/oOOvQsH1dz
\nQ8z1JXWdg8/9Zx7Ktvgwu5PQM3cjtSHX6iBPokMU8Z8TugLLtqQXKZOEGwajwvQ5\nnmf2DPkVgM08XAgALJcligwD513koAdtJd5v+9irw+5LAuO3JclqwTwwy7u/YwwID\nnAQABo1AwTjAdBgNVHQ4EFgQUo5A2tlU
+bcUfvGTD7wmEkhXKFjcwHwYDVR0jBBgw\nnFoAUo5A2tlU
+bcUfvGTD7wmEkhXKFjcwDAYDVR0TBAAUwAwEB/zANBgkqhkiG9w0B
\nAQsFAAOCAQEAwJ2rS6Mvlqk3GfEpboez2J3X7l1z8Sxoqg6ntwB+rezvK3mc9H0\nn83qcVeUcoH
+OA0IShyFN4FvRQL6X1hEheHarYwJK4agb231vb5erasuGO463eYEG\nnr4SfTuOm7SviY2xxbaBKrXJtpBp4WLL/s
+LF+nklKjaOxmXUX0sM4CTA7uFJypY\nc8Tdr8lDDNqoUtMD8BrUCji+7lmMXRcC3Qi3oZJW76ja
+kZA5mKVFPd1ATih8TbA\nni34R7EQDtFeiSvBdeKRSPp8c0KT8H1B4IXNkkCQs2W5Xp4lm99+ZtLD4glw8x6lc
\ni1YhgnQbn5E0hz55OLu5jvOkKQjPCW+8Kg==\n-----END CERTIFICATE-----",
"type": "server"
}
```

```
6LC3X82fajpVsYqF1xqEuUDndDXVD09E4u83MS6HO6a3bIVQDp6/klnYld
\niE6Vp8HH5BSKaCWKVg8lGWg1UM9wZFnlryi14KgmpIFmCu9nA8yV/6MZAe6RSDmb
\n3iyNBmiZ8aZhGw2p11YwR+15MVqFFGB+7ExkziROi7L8CFCyCezK2/oOOvQsH1dz
\nQ8z1JXWdg8/9Zx7Ktvgwu5PQM3cJtSHX6iBPokMU8Z8TugLLtQXKZOEgwajwvQ5\nmf2DPkVgM08XAgalJ
cLigwD513koAdtjd5v+9irw+5LAuO3JclqwTvvy7u/YwwID\nAQABo1AwTjAdBgNVHQ4EFgQUo5A2tlu
+bcUfvGTD7wmEkhXKFjcwHwYDVR0jBBgw\nFoAUo5A2tlu
+bcUfvGTD7wmEkhXKFjcwDAYDVR0TBAAUwAwEB/zANBgkqhkiG9w0B
\nAQsFAAOCAQEAWJ2rS6Mvlqk3GfEpboezx2J3X7l1z8Sxoqg6ntwB+rezvK3mc9H0\nn83qcVeUcoH
+0A0lSHyFN4FvRQL6X1hEheHarYwJK4agb231vb5erasuGO463eYEG\nnr4SfTuOm7SyiV2xxbaBKrXJtpBp4WLL/s
+LF+nklKjaOxkmxUX0sM4CTA7uFJypY\nnc8Tdr8lDDNqoUtMD8BrUCji+7lmMXRcC3Qi3oZJW76ja
+kZA5mKVFPd1ATih8TbA\nni34R7EQDtFeiSvBdeKRsPp8c0KT8H1B4lXNkkCQs2WX5p4lm99+ZtLD4glw8x6lc
\ni1YhgnQbn5E0hz55OLu5jvOkKQjPCW+8Kg==\n-----END CERTIFICATE-----"
}
```

 **NOTE**

To ensure information security for you and your customers, do not use the certificates and keys in the sample code.

# A Appendix

## A.1 Error Codes

If an error code starting with APIGW is returned after you call an API, rectify the fault by referring to the instructions provided in [API Gateway Error Codes](#).

| Status Code | Error Codes | Error Message                                              | Description                       | Solution                                                                                          |
|-------------|-------------|------------------------------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------------------|
| 400         | ELB.0002    | The request body is null or empty. The request is invalid. | The request body is empty.        | Configure the parameters by following the instructions in the Elastic Load Balance API Reference. |
| 400         | ELB.0004    | The API response is null or invalid.                       | The response is empty.            | Ensure that the backend server is healthy.                                                        |
| 400         | ELB.0230    | Tenant_id is empty.                                        | The project ID is left blank.     | Correct the project ID.                                                                           |
| 400         | ELB.1000    | The loadbalancer URL is too long.                          | The URL length exceeds the limit. | Correct the URL.                                                                                  |
| 400         | ELB.1001    | Request parameters invalid.                                | Invalid parameters.               | Enter valid parameters.                                                                           |
| 400         | ELB.1003    | The load balancer does not exist.                          | The load balancer does not exist. | Check the load balancer ID.                                                                       |

| Status Code | Error Codes | Error Message                                                                             | Description                                                                                         | Solution                             |
|-------------|-------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|--------------------------------------|
| 400         | ELB.1004    | The query condition is invalid.                                                           | Invalid query condition.                                                                            | Change the query condition.          |
| 400         | ELB.1005    | Invalid update request parameters.                                                        | Failed to modify the load balancer.                                                                 | Check the parameters.                |
| 400         | ELB.1007    | Querying the internal load balancer failed.                                               | Failed to query the details of the private network load balancer.                                   | Contact customer service.            |
| 400         | ELB.1008    | This load balancer has members associated.                                                | Failed to delete the load balancer.                                                                 | Change the parameter settings.       |
| 400         | ELB.1010    | Querying the load balancer quota failed.                                                  | Failed to query the quota.                                                                          | Contact customer service.            |
| 400         | ELB.1011    | Invalid private key or certificate content.                                               | Invalid private or public key of the server certificate.                                            | Enter a valid private or public key. |
| 400         | ELB.1012    | Failed to create the relationship between resources and the user.                         | Failed to create the relationship between resources and the user.                                   | Contact customer service.            |
| 400         | ELB.1013    | Quota modification failed. The quota set in the Cloud Eye alarm rule is excessively high. | The quota modification failed due to an excessively high quota setting in the Cloud Eye alarm rule. | Contact customer service.            |
| 400         | ELB.1014    | Failed to query the relationship between resources and the user.                          | Failed to query the relationship between resources and the user.                                    | Contact customer service.            |

| Status Code | Error Codes | Error Message                                                          | Description                                                                   | Solution                                                                                                       |
|-------------|-------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| 400         | ELB.1015    | Updating the load balancer failed.                                     | Failed to modify the load balancer.                                           | Check the parameters.                                                                                          |
| 400         | ELB.1018    | This load balancer has members associated.                             | Failed to delete the load balancer because it has backend servers associated. | Remove the backend servers from the associated backend server group and delete the backend server group first. |
| 400         | ELB.1020    | Incorrect load balancer ID.                                            | Incorrect load balancer ID.                                                   | Change the parameter settings.                                                                                 |
| 400         | ELB.1021    | Invalid request parameters. Invalid load balancer name.                | Invalid load balancer name.                                                   | Change the name.                                                                                               |
| 400         | ELB.1025    | Invalid update request parameters. The load balancer name is too long. | The load balancer name exceeds the length limit.                              | Change the name.                                                                                               |
| 400         | ELB.1031    | Invalid request parameters. The load balancer description is too long. | The load balancer description exceeds the length limit.                       | Change the description.                                                                                        |
| 400         | ELB.1035    | Invalid update request parameters. Invalid load balancer name.         | Invalid load balancer name.                                                   | Change the name.                                                                                               |
| 400         | ELB.1041    | Invalid request parameters. Invalid load balancer type.                | Invalid load balancer type.                                                   | Change the parameter settings.                                                                                 |

| Status Code | Error Codes | Error Message                                                                  | Description                                             | Solution                         |
|-------------|-------------|--------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------|
| 400         | ELB.1045    | Invalid update request parameters. The load balancer description is too long.  | The load balancer description exceeds the length limit. | Change the description.          |
| 400         | ELB.1051    | Invalid request parameters. Invalid load balancer bandwidth.                   | Invalid bandwidth configured for the load balancer.     | Modify the bandwidth.            |
| 400         | ELB.1061    | Invalid request parameters. Parameters vip_address and vip_subnet_id are null. | The EIP or subnet ID is left blank.                     | Enter a valid EIP or subnet ID.  |
| 400         | ELB.1071    | Invalid request parameters. vip_address is not valid.                          | Invalid EIP.                                            | Enter a valid EIP.               |
| 400         | ELB.1081    | Invalid request parameters. vpc_id is empty.                                   | The VPC ID is left blank.                               | Enter a valid VPC ID.            |
| 400         | ELB.1101    | The EIP already exists.                                                        | The EIP already exists.                                 | Enter another EIP.               |
| 400         | ELB.1110    | The API version could not be found.                                            | The API version does not exist.                         | Contact customer service.        |
| 400         | ELB.1201    | Obtaining the token failed.                                                    | Failed to obtain the token.                             | Contact customer service.        |
| 400         | ELB.1202    | enterprise_project_id cannot be empty.                                         | Verification of the enterprise project ID failed.       | Check the enterprise project ID. |



| Status Code | Error Codes | Error Message                                               | Description                                                             | Solution                               |
|-------------|-------------|-------------------------------------------------------------|-------------------------------------------------------------------------|----------------------------------------|
| 400         | ELB.1204    | Binding failed.                                             | Failed to associate the load balancer with the enterprise project.      | Contact customer service.              |
| 400         | ELB.2002    | Invalid request parameters for removing the backend server. | Failed to remove the backend server because the parameters are invalid. | Change the parameter settings.         |
| 400         | ELB.2003    | Querying the member failed.                                 | Failed to query the backend server.                                     | Contact customer service.              |
| 400         | ELB.2005    | Updating the member failed.                                 | Failed to update the backend server.                                    | Contact customer service.              |
| 400         | ELB.2010    | Invalid listener ID length.                                 | The listener ID exceeds the length limit.                               | Change the listener ID.                |
| 400         | ELB.2011    | The listener does not exist.                                | The listener does not exist.                                            | Ensure that the listener exists.       |
| 400         | ELB.2012    | The member does not exist.                                  | The backend server does not exist.                                      | Ensure that the backend server exists. |
| 400         | ELB.2020    | Invalid listener ID.                                        | Invalid listener ID.                                                    | Change the listener ID.                |
| 400         | ELB.2021    | Invalid request parameters. The member IP address is null.  | Invalid backend server IP address.                                      | Check the backend server IP address.   |
| 400         | ELB.3001    | Creating the EIP failed.                                    | Failed to assign the EIP.                                               | Contact customer service.              |

| Status Code | Error Codes | Error Message                                  | Description                                              | Solution                             |
|-------------|-------------|------------------------------------------------|----------------------------------------------------------|--------------------------------------|
| 400         | ELB.3002    | Deleting the EIP failed.                       | Failed to release the EIP.                               | Contact customer service.            |
| 400         | ELB.3003    | Querying the EIP failed.                       | Failed to query the EIP.                                 | Contact customer service.            |
| 400         | ELB.3004    | Querying EIPs failed.                          | Failed to query EIPs.                                    | Contact customer service.            |
| 400         | ELB.4001    | Creating the EIP failed.                       | Failed to assign the EIP.                                | Contact customer service.            |
| 400         | ELB.4002    | Deleting the EIP failed.                       | Failed to release the EIP.                               | Contact customer service.            |
| 400         | ELB.4003    | Querying the EIP failed.                       | Failed to query the EIP.                                 | Contact customer service.            |
| 400         | ELB.4004    | Querying EIPs failed.                          | Failed to query EIPs.                                    | Contact customer service.            |
| 400         | ELB.4005    | Updating the EIP failed.                       | Failed to update the EIP.                                | Contact customer service.            |
| 400         | ELB.5002    | Failed to delete the certificate.              | Failed to delete the certificate.                        | Contact customer service.            |
| 400         | ELB.5003    | Querying the bandwidth failed.                 | Failed to query the bandwidth.                           | Contact customer service.            |
| 400         | ELB.5004    | Invalid search criteria.                       | Invalid query condition.                                 | Change the query condition.          |
| 400         | ELB.5005    | Updating the bandwidth failed.                 | Failed to modify the bandwidth.                          | Contact customer service.            |
| 400         | ELB.5013    | Invalid private key or certificate content.    | Invalid public or private key of the server certificate. | Enter a valid public or private key. |
| 400         | ELB.5020    | The certificate ID must be 32 characters long. | The certificate ID is not a 32-character string.         | Enter a valid certificate ID.        |

| Status Code | Error Codes | Error Message                                              | Description                                 | Solution                                                                   |
|-------------|-------------|------------------------------------------------------------|---------------------------------------------|----------------------------------------------------------------------------|
| 400         | ELB.5033    | Failed to update the certificate.                          | Failed to modify the certificate.           | Contact customer service.                                                  |
| 400         | ELB.5040    | The certificate does not exist.                            | The certificate does not exist.             | Ensure that the certificate exists.                                        |
| 400         | ELB.5051    | CA certificate content is not valid.                       | Invalid CA certificate body.                | Enter a valid certificate body.                                            |
| 400         | ELB.5053    | CA certificate content is not valid.                       | Invalid CA certificate body.                | Enter a valid certificate body.                                            |
| 400         | ELB.5131    | Failed to query the certificate quota.                     | Failed to query the certificate quota.      | Contact customer service.                                                  |
| 400         | ELB.5141    | Failed to query the used certificate quota.                | Failed to query the used certificate quota. | Contact customer service.                                                  |
| 400         | ELB.5151    | The certificate quantity exceeds the quota.                | The certificate quota has been used up.     | Delete the certificates that are no longer used or request a higher quota. |
| 400         | ELB.6010    | Invalid listener ID.                                       | Invalid listener ID.                        | Change the listener ID.                                                    |
| 400         | ELB.6011    | Invalid request parameters. The listener name is too long. | The listener name exceeds the length limit. | Change the name.                                                           |
| 400         | ELB.6015    | The listener property cannot be updated.                   | The listener property cannot be modified.   | Select a property that can be modified.                                    |

| Status Code | Error Codes | Error Message                                                                            | Description                                                            | Solution                    |
|-------------|-------------|------------------------------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------|
| 400         | ELB.6021    | Invalid request parameters.<br>Invalid listener name.                                    | Invalid listener name.                                                 | Change the name.            |
| 400         | ELB.6025    | Invalid update request parameters.<br>The listener name is too long.                     | The listener name exceeds the length limit.                            | Change the name.            |
| 400         | ELB.6030    | The listener has not been associated with any load balancer.                             | The listener does not belong to any load balancer.                     | Check the listener ID.      |
| 400         | ELB.6031    | Invalid request parameters.<br>The listener description is too long.                     | The listener description exceeds the length limit.                     | Change the description.     |
| 400         | ELB.6035    | Invalid update request parameters.<br>Invalid listener name.                             | Invalid listener name.                                                 | Change the name.            |
| 400         | ELB.6040    | The load balancer that the listener is associated with does not exist.                   | The load balancer that the listener is associated with does not exist. | Check the load balancer ID. |
| 400         | ELB.6041    | Invalid request parameters.<br>The listener port must be within the range of 1 to 65535. | Invalid port number.                                                   | Change the port number.     |

| Status Code | Error Codes | Error Message                                                            | Description                                        | Solution                             |
|-------------|-------------|--------------------------------------------------------------------------|----------------------------------------------------|--------------------------------------|
| 400         | ELB.6045    | Invalid update request parameters. The listener description is too long. | The listener description exceeds the length limit. | Change the description.              |
| 400         | ELB.6051    | Invalid request parameters. Invalid load balancing algorithm.            | Invalid load balancing algorithm.                  | Change the load balancing algorithm. |
| 400         | ELB.6061    | Invalid request parameters. Invalid listener protocol.                   | Invalid listener protocol.                         | Change the protocol.                 |
| 400         | ELB.6071    | Invalid request parameters. Invalid backend protocol.                    | Invalid backend protocol.                          | Change the protocol.                 |
| 400         | ELB.6200    | Load balancer *** already has a listener with protocol_port of ***.      | The port number is in use.                         | Change the port number.              |
| 400         | ELB.7000    | The listener ID must not be null.                                        | The listener ID is left blank.                     | Change the listener ID.              |
| 400         | ELB.7001    | Invalid health check interval.                                           | Invalid update condition.                          | Change the update condition.         |
| 400         | ELB.7002    | Invalid health check deletion condition.                                 | Invalid deletion condition.                        | Change the deletion condition.       |
| 400         | ELB.7004    | Invalid health check query condition.                                    | Invalid query condition.                           | Change the query condition.          |

| Status Code | Error Codes | Error Message                             | Description                                                            | Solution                    |
|-------------|-------------|-------------------------------------------|------------------------------------------------------------------------|-----------------------------|
| 400         | ELB.7010    | The health check listener does not exist. | The listener with which the health check is associated does not exist. | Change the listener ID.     |
| 400         | ELB.7014    | The health check does not exist.          | The health check does not exist.                                       | Check the health check ID.  |
| 400         | ELB.7020    | The health check does not exist.          | The health check does not exist.                                       | Change the health check ID. |
| 400         | ELB.8001    | Creating the security group failed.       | Failed to create the security group.                                   | Contact customer service.   |
| 400         | ELB.8101    | Creating the VPC failed.                  | Failed to create the VPC.                                              | Contact customer service.   |
| 400         | ELB.8102    | Deleting the VPC failed.                  | Failed to delete the VPC.                                              | Contact customer service.   |
| 400         | ELB.8103    | Querying the VPC failed.                  | Failed to query the VPC.                                               | Contact customer service.   |
| 400         | ELB.8201    | Creating the subnet failed.               | Failed to create the subnet.                                           | Contact customer service.   |
| 400         | ELB.8202    | Deleting the subnet failed.               | Failed to delete the subnet.                                           | Contact customer service.   |
| 400         | ELB.8203    | Querying the subnet failed.               | Failed to query the subnet.                                            | Contact customer service.   |
| 400         | ELB.8902    | Invalid input for '%s'.                   | Invalid input parameters.                                              | Check input parameters.     |

| Status Code | Error Codes | Error Message                                                                               | Description                                                                                 | Solution                                                         |
|-------------|-------------|---------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|------------------------------------------------------------------|
| 400         | ELB.8909    | Certificates with multiple domains are not supported by dedicated load balancers.           | Certificates with multiple domains are not supported by dedicated load balancers.           | Check input parameters.                                          |
| 400         | ELB.8934    | The number of available IP addresses in the subnet on the downstream plane is insufficient. | The number of available IP addresses in the subnet on the downstream plane is insufficient. | Check your request based on the error message.                   |
| 400         | ELB.8938    | The IP member is supported only when the pool protocol is %s.                               | Invalid input parameters.                                                                   | Add members to supported pools or pass parameter subnet_cidr_id. |
| 400         | ELB.8939    | The load balancer's ip_target_enable must be true when adding IP members.                   | Invalid input parameters.                                                                   | Set ip_target_enable to false or pass parameter subnet_cidr_id.  |
| 400         | ELB.8950    | Resources cannot be allocated to the load balancer.                                         | Resources cannot be allocated to the load balancer.                                         | Contact customer service.                                        |
| 400         | ELB.8959    | The %s flavor field does not support update from %s to %s.                                  | Invalid input parameters when updating the flavor.                                          | Check input parameters.                                          |
| 400         | ELB.9001    | Creating the VM failed.                                                                     | Failed to create the VM.                                                                    | Contact customer service.                                        |
| 400         | ELB.9002    | Deleting the VM failed.                                                                     | Failed to delete the VM.                                                                    | Contact customer service.                                        |

| Status Code | Error Codes | Error Message                         | Description                                                       | Solution                                                         |
|-------------|-------------|---------------------------------------|-------------------------------------------------------------------|------------------------------------------------------------------|
| 400         | ELB.9003    | Querying the VM failed.               | Failed to query details of the VM.                                | Contact customer service.                                        |
| 400         | ELB.9006    | Updating the VM port failed.          | Failed to update the port bound to the VM.                        | Contact customer service.                                        |
| 400         | ELB.9007    | Binding the VM port failed.           | Failed to bind the port to the VM.                                | Contact customer service.                                        |
| 400         | ELB.9023    | Querying the image failed.            | Failed to query the image.                                        | Contact customer service.                                        |
| 400         | ELB.9033    | Querying the VM flavor failed.        | Failed to query the VM specifications.                            | Contact customer service.                                        |
| 400         | ELB.9043    | Querying the VM port failed.          | Failed to query the port bound to the VM.                         | Contact customer service.                                        |
| 400         | ELB.9061    | Querying the SMN topic failed.        | Failed to query the SMN topic.                                    | Contact customer service.                                        |
| 400         | ELB.9062    | Creating the SMN topic failed.        | Failed to create the SMN topic.                                   | Contact customer service.                                        |
| 400         | ELB.9063    | Querying the SMN subscription failed. | Failed to query the SMN subscription.                             | Contact customer service.                                        |
| 400         | ELB.9064    | Creating the SMN subscription failed. | Failed to create the SMN subscription.                            | Contact customer service.                                        |
| 400         | ELB.9800    | The resource could not be found.      | The specified load balancer does not exist when ep_id is queried. | Ensure that the load balancer belongs to the enterprise project. |



| Status Code | Error Codes | Error Message                                                                 | Description                                                                                                | Solution                                                                           |
|-------------|-------------|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| 400         | ELB.9801    | enterprise_project_id must not be null.                                       | In fine-grained authorization, the enterprise ID is not passed in the request for querying load balancers. | Ensure that the parameters in the request for querying load balancers are correct. |
| 400         | ELB.9805    | Listener protocol in the request body is null. This is a required parameter.  | ep_id in the URI is not a valid UUID.                                                                      | Check the enterprise project ID.                                                   |
| 400         | ELB.9807    | Quota exceeded for resources: %s                                              | Not enough resource quotas.                                                                                | Contact customer to expand quotas.                                                 |
| 400         | ELB.9899    | Invalid parameter. For details about the error, see the returned information. | Invalid parameter. For details about the error, see the returned information.                              | Please check parameters.                                                           |
| 401         | ELB.1103    | Token invalid                                                                 | Invalid token.                                                                                             | Contact customer service.                                                          |
| 401         | ELB.1104    | Token invalid                                                                 | Invalid token.                                                                                             | Contact customer service.                                                          |
| 401         | ELB.1105    | Token invalid                                                                 | Invalid token.                                                                                             | Contact customer service.                                                          |
| 401         | ELB.1109    | Authentication failed.                                                        | Real-name authentication failed.                                                                           | Contact customer service.                                                          |
| 403         | ELB.1091    | The number of load balancers exceeds the quota.                               | The number of load balancers exceeds the quota.                                                            | Request a higher quota or delete load balancers that are no longer needed.         |
| 403         | ELB.1102    | Invalid token. Authentication required.                                       | The token is empty.                                                                                        | Enter a valid token that has not expired.                                          |

| Status Code | Error Codes | Error Message                                                                    | Description                                                                               | Solution                                                              |
|-------------|-------------|----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------|
| 403         | ELB.2001    | Creating the member failed. The total number of members exceeds the upper limit. | Failed to add the backend server because the number of backend servers reaches the limit. | Check the maximum number of backend servers.                          |
| 403         | ELB.6091    | The number of listeners reaches the limit.                                       | The number of listeners reaches the limit.                                                | Request a higher quota or delete listeners that are no longer needed. |
| 403         | ELB.8962    | The feature is not supported.                                                    | The feature is not supported.                                                             | Contact customer service.                                             |
| 403         | ELB.9802    | elb:logtanks:create is not obtained.                                             | Authentication failed.                                                                    | Ensure that you have the permission to perform this operation.        |
| 403         | ELB.9803    | elb:loadbalancers:list is not obtained.                                          | Authentication failed.                                                                    | Ensure that you have the permission to perform this operation.        |
| 403         | ELB.9804    | elb:loadbalancers:list is not obtained.                                          | Authentication failed.                                                                    | Ensure that you have the permission to perform this operation.        |
| 404         | ELB.1002    | The load balancer is not found.                                                  | The load balancer does not exist.                                                         | Change the load balancer ID.                                          |
| 404         | ELB.8904    | %s %s could not be found.                                                        | The resource could not be found.                                                          | Please check the parameters.                                          |
| 409         | ELB.8905    | Quota exceeded for resources: %s                                                 | Not enough resource quotas.                                                               | Contact customer service.                                             |

| Status Code | Error Codes | Error Message                                                                | Description                                                                   | Solution                                       |
|-------------|-------------|------------------------------------------------------------------------------|-------------------------------------------------------------------------------|------------------------------------------------|
| 409         | ELB.8907    | Data conflict.<br>For details about the error, see the returned information. | Data conflict.<br>For details about the error, see the returned information.  | Check your request based on the error message. |
| 500         | ELB.8906    | Internal server error.                                                       | Internal error.<br>For details about the error, see the returned information. | Contact customer service.                      |

## A.2 Status Codes

**Table A-1** Normal status codes

| Status Code | Message    | Description                              |
|-------------|------------|------------------------------------------|
| 200         | OK         | Normal response to GET and PUT requests. |
| 201         | Created    | Normal response to POST requests.        |
| 204         | No Content | Normal response to DELETE requests.      |

**Table A-2** Error codes

| Status Code | Message      | Description                                                   |
|-------------|--------------|---------------------------------------------------------------|
| 400         | Bad Request  | Invalid request URI.                                          |
|             |              | Too long request header.                                      |
|             |              | Invalid request body.                                         |
|             |              | Unreleased fields in the request body.                        |
| 401         | Unauthorized | Authentication information unavailable in the request header. |
|             |              | Expired authentication information in the request header.     |
| 403         | Forbidden    | No permissions to access APIs.                                |

| Status Code | Message                                | Description                                                                                              |
|-------------|----------------------------------------|----------------------------------------------------------------------------------------------------------|
| 404         | Not Found                              | No available request URI.                                                                                |
|             |                                        | No available requested resources.                                                                        |
| 405         | Method Not Allowed                     | Method specified in the request not allowed.                                                             |
| 406         | Not Acceptable                         | Responses from the server failed to be received by the client.                                           |
| 407         | Proxy Authentication Required          | Proxy authentication required before the request can be processed.                                       |
| 408         | Request Timeout                        | Request timed out.                                                                                       |
| 409         | Conflict                               | Failed to complete the request due to conflicts.                                                         |
|             |                                        | The resource being accessed by another request.                                                          |
| 500         | Internal IaaS OpenStack network error. | Service internal error.                                                                                  |
|             |                                        | Server exception.                                                                                        |
| 501         | Not Implemented                        | Failed to complete the request because the server does not support the requested function.               |
| 502         | Bad Gateway                            | Failed to complete the request because the server receives an invalid response from the upstream server. |
| 503         | Service Unavailable                    | Failed to complete the request because the system is temporarily abnormal.                               |
| 504         | Gateway Timeout                        | Gateway timed out.                                                                                       |

## A.3 General Information About Shared Load Balancers

The following information applies only to shared load balancers.

### A.3.1 Querying Data in Pages

APIs v2.0 allow users to query data in pages by adding the limit and marker parameters to the URL of the list request. The query results are displayed in the ascending order of IDs.

- **next ref** in the response indicates the URL of the next page.
- **previous ref** in the response indicates the URL of the previous page.

## Request

**Table A-3** Parameter description

| Parameter    | Type   | Mandatory | Description                                                                                                                  |
|--------------|--------|-----------|------------------------------------------------------------------------------------------------------------------------------|
| limit        | int    | No        | Specifies the number of records on each page.                                                                                |
| marker       | String | No        | Specifies the resource ID of pagination query. If the parameter is left blank, only resources on the first page are queried. |
| page_reverse | Bool   | No        | Specifies the paging sequence. The value can be <b>true</b> or <b>false</b> .                                                |

## Response

None

## Example

- Example request  
GET /v2.0/networks?limit=2&marker=3d42a0d4-a980-4613-ae76-a2cddecff054&page\_reverse=False

- Example response

```
{
 "networks": [
 {
 "status": "ACTIVE",
 "subnets": [],
 "name": "liudongtest ",
 "admin_state_up": false,
 "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
 "id": "60c809cb-6731-45d0-ace8-3bf5626421a9"
 },
 {
 "status": "ACTIVE",
 "subnets": [
 "132dc12d-c02a-4c90-9cd5-c31669aace04"
],
 "name": "publicnet",
 "admin_state_up": true,
 "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
 "id": "9daeac7c-a98f-430f-8e38-67f9c044e299"
 }
],
 "networks_links": [
 {
 "href": "http://192.168.82.231:9696/v2.0/networks?limit=2&marker=9daeac7c-a98f-430f-8e38-67f9c044e299",
 "rel": "next"
 },
 {
 "href": "http://192.168.82.231:9696/v2.0/networks?limit=2&marker=60c809cb-6731-45d0-ace8-3bf5626421a9&page_reverse=True",
 "rel": "previous"
 }
]
}
```

## A.3.2 Sequencing Query Results

API v2.0 enables the system to sort queried results based on customized keys by adding the **sort\_key** and **sort\_dir** parameters to the URL of the list request.

**sort\_key** specifies the parameter used for sequencing results, and **sort\_dir** specifies whether results are displayed in ascending or descending order.

These APIs allow you to sort query results by multiple criteria. The number of **sort\_key** parameters must be equal to that of **sort\_dir** parameters. Otherwise, 400 status code is returned.

### Example Request

```
GET /v2.0/networks?sort_key=name&sort_dir=asc&sort_key=status&sort_dir=desc
```

### Example Response

```
{
 "networks": [
 {
 "status": "ACTIVE",
 "subnets": [],
 "name": "liudongtest ",
 "admin_state_up": false,
 "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
 "id": "60c809cb-6731-45d0-ace8-3bf5626421a9"
 },
 {
 "status": "ACTIVE",
 "subnets": [
 "132dc12d-c02a-4c90-9cd5-c31669aace04"
],
 "name": "publicnet",
 "admin_state_up": true,
 "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
 "id": "9daeac7c-a98f-430f-8e38-67f9c044e299"
 },
 {
 "status": "ACTIVE",
 "subnets": [
 "e25189a8-54df-4948-9396-d8291ffc92a0"
],
 "name": "testnet01",
 "admin_state_up": true,
 "tenant_id": "6fbe9263116a4b68818cf1edce16bc4f",
 "id": "3d42a0d4-a980-4613-ae76-a2cddecff054"
 }
]
}
```

## A.3.3 Basic Workflow

The basic workflow of sharedload balancers contains the following: creating a load balancer, adding a listener to a specific load balancer, adding a backend server group to a specific listener, configuring a health check for a specific backend server group, and adding a backend server to a specific backend server group. Deletion operations include removing a backend server, deleting a health check, deleting a backend server group, deleting a listener, and deleting a load balancer.

## Provision Resources

- Creating a load balancer
- Adding a listener to a specific load balancer
- Adding a backend server group to a specific listener
- Configuring a health check for a specific backend server group
- Adding a backend server to a specific backend server group

## Reclaim Resources

- Removing a backend server
- Deleting a health check
- Deleting a backend server group
- Deleting a listener
- Deleting a load balancer

# A.4 Obtaining a Project ID

## Scenarios

A project ID is required for some URLs when an API is called. Therefore, you need to obtain a project ID in advance. Two methods are available:

- [Obtain the Project ID by Calling an API](#)
- [Obtain the Project ID from the Console](#)

## Obtain the Project ID by Calling an API

You can obtain a project ID by calling the API used to [query projects based on specified criteria](#).

The API used to obtain a project ID is GET `https://{Endpoint}/v3/projects`. {Endpoint} is the IAM endpoint and can be obtained from [Regions and Endpoints](#). For details about API authentication, see [Authentication](#).

The following is an example response. The value of **id** is the project ID.

```
{
 "projects": [
 {
 "domain_id": "65ewtrgaggshhk1223245sghjlse684b",
 "is_domain": false,
 "parent_id": "65ewtrgaggshhk1223245sghjlse684b",
 "name": "project_name",
 "description": "",
 "links": {
 "next": null,
 "previous": null,
 "self": "https://www.example.com/v3/projects/a4adasfjljaaakla12334jklga9sasfg"
 },
 "id": "a4adasfjljaaakla12334jklga9sasfg",
 "enabled": true
 }
],
 "links": {
 "next": null,

```

```
"previous": null,
"self": "https://www.example.com/v3/projects"
}
}
```

## Obtain a Project ID from the Console

To obtain a project ID from the console, perform the following operations:

1. Access [My Credentials](#).
2. On the **API Credentials** page, check the project ID in the project list.

**Figure A-1** Viewing the project ID

