

Elastic Load Balance

API Reference

Issue 01
Date 2022-09-30



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1 Before You Start

1.1 Overview

Welcome to *Elastic Load Balance API Reference*. ELB distributes incoming traffic across backend servers based on the listening 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](#).

1.2 API Calling

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

1.3 Notes and Constraints

- The number 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 API description.

1.4 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. For security purposes, 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. 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.

- Enterprise project

Enterprise projects group and manage resources across regions. Resources in different enterprise projects are logically isolated.

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	Load balancer	Creates, updates, deletes a load balancer, shows 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, and lists certificates.
	Security policy	Adds, modifies, and deletes a security policy, shows the details of a security policy, and lists security policies.
	IP address group	Configures, modifies, and disables an IP address group, shows the details of an IP address group, and lists IP address groups.
	Listener	Adds, modifies, and deletes a listener, shows the details of a listener, and lists listeners.
	Backend server group	Adds, modifies, and deletes a backend server group, shows the details of a backend server group, and lists backend server groups.
	Backend server	Adds, modifies, and deletes a backend server, shows the details of a backend server, and lists backend servers.
	Health check	Configures, modifies, and disables a health check, shows the details of a health check, and lists health checks.

Type	Resource	Description
	Forwarding policy	Adds, updates, and deletes a forwarding policy, shows the details of a forwarding policy, lists forwarding policies, and updates forwarding policy priorities.
	Forwarding rule	Adds, modifies, and deletes a forwarding rule, shows the details of a forwarding rule, and lists forwarding rules.

3 Calling APIs

3.1 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. The obtained token can then be used to authenticate the calling of other APIs.

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 3-1 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 Dublin is iam.myhuaweicloud.eu .
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 .

Parameter	Description
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 **EU-Dublin** region, obtain the endpoint of IAM (**iam.myhuaweicloud.eu**) 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.myhuaweicloud.eu/v3.0/OS-USER/users`

 **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 3-2 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.myhuaweicloud.eu/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 3-3 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	<p>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).</p> <p>After the request is processed, the value of X-Subject-Token in the response header is the token value.</p>	<p>No</p> <p>This field is mandatory for token authentication.</p>	<p>The following is part of an example token:</p> <p>MIIPAgYJKoZlhvc NAQcCo...ggg1B BIINPXsidG9rZ</p>

 **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.myhuaweicloud.eu/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
- **password**: login password of an IAM user

```
POST https://iam.myhuaweicloud.eu/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. In the response to the API used to obtain a user token, **X-Subject-Token** is the desired user token. This token can then be used to authenticate the calling of other APIs.

3.2 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.

In AK/SK authentication, AK/SK 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 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

The validity period of a token is 24 hours. When using a token for authentication, cache it to prevent frequently calling the IAM API used to obtain a user token.

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 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": SADMIN_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 to which the IAM user belongs
          }
        }
      }
    },
    "scope": {
      "project": {
        "name": "xxxxxxxx" // 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 **ABCDEFJ....**, **X-Auth-Token: ABCDEFJ....** can be added to a request as follows:

```
POST https://iam.myhuaweicloud.eu/v3/auth/projects
Content-Type: application/json
X-Auth-Token: ABCDEFJ....
```

3.3 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 3-1 shows the response header fields for the API used to **create an IAM user**. The **X-Subject-Token** header field is the desired user token. This token can then be used to authenticate the calling of other APIs.

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 3-1 Header fields of the response to the request for creating an IAM user

```
"X-Frame-Options": "SAMEORIGIN",
"X-IAM-ETag-id": "2562365939-d8f6f12921974cb097338ac11fceac8a",
"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_ [REDACTED] _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 is 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.

4 APIs (V3)

4.1 API Version

4.1.1 Querying API Versions

Function

This API is used to query all available ELB API versions.

Calling Method

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

URI

GET /versions

Request Parameters

None

Response Parameters

Status code: 200

Table 4-1 Response body parameters

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

Table 4-2 ApiVersionInfo

Parameter	Type	Description
id	String	Specifies the API version. The value can be v3 , v2 , or v2.0 in ascending order.
status	String	Specifies the status of the API version. The values are as follows: <ul style="list-style-type: none">● CURRENT: current version● STABLE: stable version● DEPRECATED: discarded version Note: CURRENT indicates the latest version.

Example Requests

Querying API versions of a load balancer

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

Example Responses

None

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.2 Quota

4.2.1 Querying Quotas

Function

This API is used to query the quotas of load balancers and related resources in a specific project.

Calling Method

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

URI

GET /v3/{project_id}/elb/quotas

Table 4-3 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-4 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-5 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
quota	Quota object	Specifies the quotas of load balancers and associated resources. Only the total quotas are returned. Remaining available quotas will not be returned.

Table 4-6 Quota

Parameter	Type	Description
project_id	String	Specifies the project ID.

Parameter	Type	Description
loadbalancer	Integer	Specifies the load balancer quota. <ul style="list-style-type: none">• If the value is greater than or equal to 0, it indicates the load balancer quota.• If the value is -1, the quota is not limited.
certificate	Integer	Specifies the certificate quota. <ul style="list-style-type: none">• If the value is greater than or equal to 0, it indicates the certificate quota.• If the value is -1, the quota is not limited.
listener	Integer	Specifies the listener quota. <ul style="list-style-type: none">• If the value is greater than or equal to 0, it indicates the listener quota.• If the value is -1, the quota is not limited.
l7policy	Integer	Specifies the forwarding policy quota. <ul style="list-style-type: none">• If the value is greater than or equal to 0, it indicates the forwarding policy quota.• If the value is -1, the quota is not limited.
condition_per_policy	Integer	Specifies the maximum number of forwarding rules per forwarding policy. <ul style="list-style-type: none">• If the value is greater than or equal to 0, it indicates the current quota.• -1 indicates that the quota is not limited.
pool	Integer	Specifies the backend server group quota. <ul style="list-style-type: none">• If the value is greater than or equal to 0, it indicates the backend server group quota.• If the value is -1, the quota is not limited.
healthmonitor	Integer	Specifies the health check quota. <ul style="list-style-type: none">• If the value is greater than or equal to 0, it indicates the health check quota.• If the value is -1, the quota is not limited.
member	Integer	Specifies the backend server quota. <ul style="list-style-type: none">• If the value is greater than or equal to 0, it indicates the backend server quota.• If the value is -1, the quota is not limited.
members_per_pool	Integer	Specifies the maximum number of backend servers in a backend server group. <ul style="list-style-type: none">• If the value is greater than or equal to 0, it indicates the backend server quota.• If the value is -1, the quota is not limited.

Parameter	Type	Description
listeners_per_pool	Integer	Specifies the maximum number of backend server groups that can be associated with a listener. <ul style="list-style-type: none">If the value is greater than or equal to 0, it indicates the current quota.-1 indicates that the quota is not limited.
ipgroup	Integer	Specifies the IP address group quota. <ul style="list-style-type: none">If the value is greater than or equal to 0, it indicates the IP address group quota.If the value is -1, the quota is not limited.
ipgroup_bindings	Integer	Specifies the maximum number of listeners that can be associated with an IP address group. <ul style="list-style-type: none">If the value is greater than or equal to 0, it indicates the maximum number of listeners that can be associated with an IP address group.If the value is -1, the quota is not limited.
ipgroup_max_length	Integer	Specifies the maximum number of IP addresses that can be added to an IP address group. <ul style="list-style-type: none">If the value is greater than or equal to 0, it indicates the IP address quota.If the value is -1, the quota is not limited.
security_policy	Integer	Specifies the custom security policy quota. <ul style="list-style-type: none">If the value is greater than or equal to 0, it indicates the custom security policy quota.If the value is -1, the quota is not limited.
listeners_per_loadbalancer	Integer	Specifies the maximum number of listeners that can be associated with a load balancer. The value can be: <ul style="list-style-type: none">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,
    "security_policy" : 50,
    "project_id" : "060576798a80d5762fafc01a9b5eedc7",
    "condition_per_policy" : 10,
    "listeners_per_pool" : 50,
    "listeners_per_loadbalancer" : 50
  }
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.2.2 Querying Quota Usage

Function

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

Calling Method

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

URI

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

Table 4-7 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-8 Query Parameters

Parameter	Mandatory	Type	Description
quota_key	No	Array	Specifies the resource type. The value can be loadbalancer , listener , ipgroup , pool , member , members_per_pool , healthmonitor , l7policy , certificate , security_policy , ipgroup_bindings , or ipgroup_max_length . Multiple values can be queried in the format of <i>quota_key=xxx&quota_key=xxx</i> .

Request Parameters

Table 4-9 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-10 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
quotas	Array of QuotaInfo objects	Specifies the resource quotas.

Table 4-11 QuotaInfo

Parameter	Type	Description
quota_key	String	Specifies the resource type. The value can be loadbalancer , listener , ipgroup , pool , member , members_per_pool , healthmonitor , l7policy , certificate , security_policy , ipgroup_bindings , or ipgroup_max_length . members_per_pool indicates the maximum number of backend servers that can be added to a backend server group. ipgroup_bindings indicates the maximum number of listeners that can be bound to an IP address group. ipgroup_max_length indicates the maximum number of IP addresses that can be added to an IP address group.
quota_limit	Integer	Specifies the total quota. Values: <ul style="list-style-type: none">• 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	Specifies the used quota.
unit	String	Specifies the quota unit. The value can only be count .

Example Requests

Querying the quota of a specific ELB resource 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,
    "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"
  }
}

```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.3 AZ

4.3.1 Querying AZs

Function

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

- One set of AZs is returned by default. When you create a dedicated load balancer, you can select one or more AZs in this set.
- 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 4-12 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-13 Query Parameters

Parameter	Mandatory	Type	Description
public_border_group	No	String	Specifies the AZ group.

Request Parameters

Table 4-14 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-15 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
availability_zones	Array<Array<AvailabilityZone>>	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.

Table 4-16 AvailabilityZone

Parameter	Type	Description
code	String	Specifies the AZ code.
state	String	Specifies the AZ status. The value can only be ACTIVE .
protocol	Array of strings	Specifies the type of the flavor that is available. <ul style="list-style-type: none"> • L4 indicates the flavor at Layer 4 (flavor for network load balancing). • L7 indicates the flavor at Layer 7 (flavor for application load balancing).
public_border_group	String	Specifies the AZ group, for example, center .
category	Integer	Specifies the AZ code. 0 indicates center . 21 indicates homezone .

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

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.4 Load Balancer Flavor

4.4.1 Querying Flavors

Function

This API is used to query all load balancer flavors that are available to a specific user in a specific region.

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 4-17 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-18 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the last record on the previous page. Note: <ul style="list-style-type: none">• This parameter must be used together with limit.• If this parameter is not specified, the first page will be queried.• This parameter cannot be left blank or set to an invalid ID.

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records on each page. Minimum: 0 Maximum: 2000 Default: 2000
page_reverse	No	Boolean	Specifies whether to use reverse query. Values: <ul style="list-style-type: none">• true: Query the previous page.• false (default): Query the next page. Note: <ul style="list-style-type: none">• This parameter must be used together with limit.• If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker.
id	No	Array	Specifies the flavor ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> .
name	No	Array	Specifies the flavor name. Multiple names can be queried in the format of <i>name=xxx&name=xxx</i> .

Parameter	Mandatory	Type	Description
type	No	Array	<p>Specifies the flavor type. The type can be:</p> <ul style="list-style-type: none"> • L4 indicates a Layer-4 flavor. • L7 indicates a Layer-7 flavor. • gateway indicates the flavor of a gateway load balancer. • L4_elastic indicates the minimum Layer-4 flavor for elastic scaling. L7_elastic indicates the minimum Layer-7 flavor for elastic scaling. • L4_elastic_max indicates the maximum Layer-4 flavor for elastic scaling. L7_elastic_max indicates the maximum Layer-7 flavor for elastic scaling. gateway_elastic_max indicates the maximum flavor for elastic scaling. <p>Multiple types can be queried in the format of <i>type=xxx&type=xxx</i>.</p>
loadbalancer_type	No	Array	<p>Specifies the load balancer type. The type can be:</p> <ul style="list-style-type: none"> • gateway: indicates a gateway load balancer. • null (default): indicates other types of load balancers.
shared	No	Boolean	<p>Specifies whether the flavor is available to all users.</p> <ul style="list-style-type: none"> • true indicates that the flavor is available to all users. • false indicates that the flavor is available only to a specific user.

Request Parameters

Table 4-19 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-20 Response body parameters

Parameter	Type	Description
flavors	Array of Flavor objects	Lists the flavors.
page_info	PageInfo object	Shows pagination information about the load balancer flavors.
request_id	String	Specifies the request ID. The value is automatically generated.

Table 4-21 Flavor

Parameter	Type	Description
id	String	Specifies the flavor ID.
info	FlavorInfo object	Specifies the flavor metrics.

Parameter	Type	Description
name	String	Specifies the flavor name. <ul style="list-style-type: none">• L4_flavor.elb.s1.small• L4_flavor.elb.s2.small• L4_flavor.elb.s1.medium• L4_flavor.elb.s2.medium• L4_flavor.elb.s1.large• L4_flavor.elb.s2.large• L4_flavor.elb.pro.max• L7_flavor.elb.s1.small• L7_flavor.elb.s2.small• L7_flavor.elb.s1.medium• L7_flavor.elb.s2.medium• L7_flavor.elb.s1.large• L7_flavor.elb.s2.large• L7_flavor.elb.s1.extra-large• L7_flavor.elb.s2.extra-large• L7_flavor.elb.pro.max
shared	Boolean	Specifies whether the flavor is available to all users. <ul style="list-style-type: none">• true indicates that the flavor is available to all users.• false indicates that the flavor is available only to a specific user.
project_id	String	Specifies the project ID.

Parameter	Type	Description
type	String	Specifies the flavor type. The type can be: <ul style="list-style-type: none"> • L4 indicates a Layer-4 flavor. • L7 indicates a Layer-7 flavor. • gateway indicates the flavor of a gateway load balancer. • L4_elastic indicates the minimum Layer-4 flavor for elastic scaling. L7_elastic indicates the minimum Layer-7 flavor for elastic scaling. • L4_elastic_max indicates the maximum Layer-4 flavor for elastic scaling. L7_elastic_max indicates the maximum Layer-7 flavor for elastic scaling. gateway_elastic_max indicates the maximum flavor for elastic scaling. Minimum: 1 Maximum: 32
flavor_sold_out	Boolean	Specifies the flavor is available. <ul style="list-style-type: none"> • true indicates you can create a load balancer with this flavor. • false indicates you cannot create a load balancer with this flavor.
public_border_group	String	Specifies the AZ group, for example, center .
category	String	Specifies the AZ code. 0 indicates center . 21 indicates homezone .

Table 4-22 FlavorInfo

Parameter	Type	Description
connection	Integer	Specifies the number of concurrent connections per second.
cps	Integer	Specifies the number of new connections per second.
qps	Integer	Specifies the number of requests per second. This parameter is available only for load balancers at Layer 7.
bandwidth	Integer	Specifies the bandwidth.

Parameter	Type	Description
lcu	Integer	Specifies the number of LCUs in the flavor. An LCU measures the dimensions on which a dedicated load balancer routes the traffic. The higher value indicates better performance.
https_cps	Integer	Specifies the number of new HTTPS connections. This parameter is available only for load balancers at Layer 7.

Table 4-23 PageInfo

Parameter	Type	Description
previous_mar ker	String	Specifies the ID of the first record in the pagination query result.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

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
  }, {
    "name" : "L4_flavor.elb.s2.small",
    "shared" : true,
    "project_id" : "8d53f081ea2444aa95e2bfa942ef6ee",
```

```
"info" : {
  "bandwidth" : 100000,
  "connection" : 1000000,
  "cps" : 20000,
  "lcu" : 20
},
"id" : "03925294-4ae2-4cdb-b912-cf171e782095",
"type" : "L4",
"flavor_sold_out" : false
}],
"page_info" : {
  "next_marker" : "03925294-4ae2-4cdb-b912-cf171e782095",
  "previous_marker" : "037418d4-8c9e-40b8-9e54-70ff4848fd82",
  "current_count" : 2
}
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.4.2 Viewing Details of a Flavor

Function

This API is used to view details of a flavor.

Calling Method

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

URI

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

Table 4-24 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
flavor_id	Yes	String	Specifies the flavor ID.

Request Parameters

Table 4-25 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-26 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
flavor	Flavor object	Specifies the flavor.

Table 4-27 Flavor

Parameter	Type	Description
id	String	Specifies the flavor ID.
info	FlavorInfo object	Specifies the flavor metrics.

Parameter	Type	Description
name	String	Specifies the flavor name. <ul style="list-style-type: none">• L4_flavor.elb.s1.small• L4_flavor.elb.s2.small• L4_flavor.elb.s1.medium• L4_flavor.elb.s2.medium• L4_flavor.elb.s1.large• L4_flavor.elb.s2.large• L4_flavor.elb.pro.max• L7_flavor.elb.s1.small• L7_flavor.elb.s2.small• L7_flavor.elb.s1.medium• L7_flavor.elb.s2.medium• L7_flavor.elb.s1.large• L7_flavor.elb.s2.large• L7_flavor.elb.s1.extra-large• L7_flavor.elb.s2.extra-large• L7_flavor.elb.pro.max
shared	Boolean	Specifies whether the flavor is available to all users. <ul style="list-style-type: none">• true indicates that the flavor is available to all users.• false indicates that the flavor is available only to a specific user.
project_id	String	Specifies the project ID.

Parameter	Type	Description
type	String	Specifies the flavor type. The type can be: <ul style="list-style-type: none">• L4 indicates a Layer-4 flavor.• L7 indicates a Layer-7 flavor.• gateway indicates the flavor of a gateway load balancer.• L4_elastic indicates the minimum Layer-4 flavor for elastic scaling. L7_elastic indicates the minimum Layer-7 flavor for elastic scaling.• L4_elastic_max indicates the maximum Layer-4 flavor for elastic scaling. L7_elastic_max indicates the maximum Layer-7 flavor for elastic scaling. gateway_elastic_max indicates the maximum flavor for elastic scaling. Minimum: 1 Maximum: 32
flavor_sold_out	Boolean	Specifies the flavor is available. <ul style="list-style-type: none">• true indicates you can create a load balancer with this flavor.• false indicates you cannot create a load balancer with this flavor.
public_border_group	String	Specifies the AZ group, for example, center .
category	String	Specifies the AZ code. 0 indicates center . 21 indicates homezone .

Table 4-28 FlavorInfo

Parameter	Type	Description
connection	Integer	Specifies the number of concurrent connections per second.
cps	Integer	Specifies the number of new connections per second.
qps	Integer	Specifies the number of requests per second. This parameter is available only for load balancers at Layer 7.
bandwidth	Integer	Specifies the bandwidth.

Parameter	Type	Description
lcu	Integer	Specifies the number of LCUs in the flavor. An LCU measures the dimensions on which a dedicated load balancer routes the traffic. The higher value indicates better performance.
https_cps	Integer	Specifies the number of new HTTPS connections. This parameter is available only for load balancers at Layer 7.

Example Requests

Querying 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" : "8d53f081ea24444aa95e2bfa942ef6ee",
    "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
  },
  "request_id" : "3b9fb516-b7bb-4760-9128-4a23dd36ae10"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.5 Reserved IP Address

4.5.1 Calculating the Number of Reserved IP Addresses

Function

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

- Calculate the number of IP addresses required for adding the first HTTP or HTTPS listener to a dedicated load balancer: **loadbalancer_id** is passed, **l7_flavor_id** is left blank, and **ip_target_enable** is not passed or is set to **false**.
- Calculate the number of IP addresses required for changing the flavors of a dedicated load balancer or enabling **IP as a Backend** for a dedicated load balancer: **loadbalancer_id** is passed, and **l7_flavor_id** is not left blank or **ip_target_enable** is set to **true**.
- Calculate the number of IP addresses required for creating a dedicated load balancer: **availability_zone_id** is passed, **parameters l7_flavor_id**, **ip_target_enable**, and **ip_version** are optional, and **loadbalancer_id** is not passed.

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 is the number of IP addresses used by a dedicated load balancer.

Calling Method

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

URI

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

Table 4-29 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-30 Query Parameters

Parameter	Mandatory	Type	Description
l7_flavor_id	No	String	<p>Specifies the ID of the load balancer flavor at Layer 7.</p> <p>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.</p> <p>Application scenarios: creating a dedicated load balancer with a Layer-7 flavor or changing the Layer 7 flavors of a dedicated load balancer</p>
ip_target_enable	No	Boolean	<p>Specifies whether to enable IP as a Backend.</p> <ul style="list-style-type: none">• 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 or for disabling IP as a Backend for an existing dedicated load balancer will be calculated. If this parameter is not passed, IP as a Backend is disabled. <p>Application scenarios: creating a dedicated load balancer or changing the flavors of a dedicated load balancer</p>

Parameter	Mandatory	Type	Description
ip_version	No	Integer	<p>Specifies the IP address version of the load balancer. The value can be 4 or 6.</p> <ul style="list-style-type: none"> • 4: The number of reserved IPv4 addresses required for creating a dedicated load balancer will be calculated. • 6: The number of reserved IPv6 addresses required for creating a dedicated load balancer will be calculated. <p>Application scenario: creating a dedicated load balancer.</p>
loadbalancer_id	No	String	<p>Specifies the load balancer ID. The number of reserved IP addresses required for changing the flavors of a dedicated load balancer or for adding the first HTTP or HTTPS listener to a dedicated load balancer will be calculated.</p> <p>Application scenario: changing the flavors of a dedicated load balancer or adding the first HTTP or HTTPS listener to a dedicated load balancer</p>
availability_zone_id	No	Array	<p>Calculates the number of reserved IP addresses required for creating a dedicated load balancer in the AZs specified by availability_zone_id.</p> <p>Application scenario: creating a dedicated load balancer</p> <p>Constraint: This parameter will not take effect when loadbalancer_id is passed.</p>

Request Parameters

Table 4-31 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-32 Response body parameters

Parameter	Type	Description
preoccupy_ip	PreoccupyIp object	Shows reserved IP address information.
request_id	String	Specifies the request ID. The value is automatically generated.

Table 4-33 PreoccupyIp

Parameter	Type	Description
total	Integer	Specifies the number of preoccupied IP addresses.

Example Requests

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

```
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 /v3/{project_id}/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 /v3/{project_id}/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"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.6 Load Balancer

4.6.1 Creating a Load Balancer

Function

This API is used to create a dedicated load balancer. When you create a dedicated load balancer, note the following:

- Specify **vip_subnet_cidr_id** if you want to bind a private IPv4 address to the dedicated load balancer.
- Specify **publicip** and either **vpc_id** or **vip_subnet_cidr_id** if you want to bind a new IPv4 EIP to the dedicated 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 dedicated load balancer.
- Specify **ipv6_vip_virsubnet_id** if you want to bind a private IPv6 address to the dedicated load balancer.
- Specify both **ipv6_vip_virsubnet_id** and **ipv6_bandwidth** if you want to bind a public IPv6 address to the dedicated 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.
- Specify **prepaid_options** if you want to create a yearly/monthly load balancer.
- 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.
- Set **loadbalancer_type** to **gateway** if you want to create a gateway load balancer. **vip_address** and **ipv6_vip_address** are not supported by gateway load balancers. 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 dedicated 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 enable this function for a dedicated load balancer, 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.
- **admin_state_up** must be set to **true**.
- **provider** must be set to **vlb**.
- **elb_virsubnet_ids** indicates the subnets that support IPv4/IPv6 dual stack or only IPv4 subnets. If only IPv4 subnets are supported, **ipv6_vip_virsubnet_id** must be left blank.
- If you bind an EIP to the load balancer during creation, you cannot unbind it from the load balancer by calling the API after the load balancer is created. Instead, you can unbind the EIP only on the ELB console. Locate the dedicated 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 a 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 4-34 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID of the load balancer. Minimum: 0 Maximum: 36

Request Parameters

Table 4-35 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	No	String	Specifies the token used for IAM authentication. Minimum: 0 Maximum: 4096

Table 4-36 Request body parameters

Parameter	Mandatory	Type	Description
loadbalancer	Yes	CreateLoadBalancerOption object	Specifies the load balancer.

Table 4-37 CreateLoadBalancerOption

Parameter	Mandatory	Type	Description
project_id	No	String	Specifies the project ID. Minimum: 1 Maximum: 32
name	No	String	Specifies the load balancer name. Minimum: 0 Maximum: 255

Parameter	Mandatory	Type	Description
description	No	String	Provides supplementary information about the load balancer. Minimum: 0 Maximum: 255
vip_address	No	String	Specifies the private IPv4 address bound to the load balancer. The IP address must be from the IPv4 subnet where the load balancer resides and should not be occupied by other services. Note: <ul style="list-style-type: none">• vip_subnet_cidr_id is also required if vip_address is passed.• If only vip_subnet_cidr_id is passed, the system will automatically assign a private IPv4 address to the load balancer.• If both vip_address and vip_subnet_cidr_id are not passed, no private IPv4 address will be assigned, and the value of vip_address will be null.

Parameter	Mandatory	Type	Description
vip_subnet_cidr_id	No	String	<p>Specifies the ID of the IPv4 subnet where the load balancer resides. This parameter is mandatory if you need to create a load balancer with a private IPv4 address.</p> <p>You can query parameter neutron_subnet_id in the response by calling the API (GET https:// {VPC_Endpoint}/v1/ {project_id}/subnets).</p> <p>Note:</p> <ul style="list-style-type: none"> • vpc_id, vip_subnet_cidr_id and ipv6_vip_virsubnet_id cannot be left blank at the same time. The subnet specified by vip_subnet_cidr_id and the subnet specified by ipv6_vip_virsubnet_id must be in the VPC specified by vpc_id. • The subnet specified by vip_subnet_cidr_id must be in the VPC specified by vpc_id if both vpc_id and vip_subnet_cidr_id are passed. <p>Minimum: 1 Maximum: 36</p>

Parameter	Mandatory	Type	Description
ipv6_vip_virsubnet_id	No	String	<p>Specifies the ID of the IPv6 subnet where the load balancer resides. You can query id in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets).</p> <p>Note:</p> <ul style="list-style-type: none">• vpc_id, vip_subnet_cidr_id and ipv6_vip_virsubnet_id cannot be left blank at the same time. The subnet specified by vip_subnet_cidr_id and the subnet specified by ipv6_vip_virsubnet_id must be in the VPC specified by vpc_id.• IPv6 must have been enabled for the IPv6 subnet where the load balancer resides.
provider	No	String	<p>Specifies the provider of the load balancer. The value can only be vlb.</p> <p>Minimum: 1 Maximum: 255</p>
l4_flavor_id	No	String	<p>Specifies the ID of a flavor at Layer 4.</p> <p>Minimum: 1 Maximum: 36</p>
l7_flavor_id	No	String	<p>Specifies the ID of a flavor at Layer 7.</p> <p>Minimum: 1 Maximum: 36</p>
gw_flavor_id	No	String	<p>Specifies the flavor ID of the gateway load balancer. If gw_flavor_id is not specified, the default flavor is used. The default flavor varies by site.</p> <p>Minimum: 1 Maximum: 36</p>

Parameter	Mandatory	Type	Description
guaranteed	No	Boolean	<p>Specifies whether the load balancer is a dedicated load balancer.</p> <ul style="list-style-type: none"> • true (default): The load balancer is a dedicated load balancer. • false: The load balancer is a shared load balancer. <p>Currently, the value can only be true. If the value is set to false, 400 Bad Request will be returned.</p>
loadbalancer_type	No	String	<p>Specifies the load balancer type. The type can be:</p> <ul style="list-style-type: none"> • gateway: indicates a gateway load balancer. • null (default): indicates other types of load balancers.
vpc_id	No	String	<p>Specifies the ID of the VPC where the load balancer resides. You can query parameter id in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/vpcs).</p> <p>vpc_id, vip_subnet_cidr_id and ipv6_vip_virsubnet_id cannot be left blank at the same time. The subnet specified by vip_subnet_cidr_id and the subnet specified by ipv6_vip_virsubnet_id must be in the VPC specified by vpc_id.</p>
availability_zone_list	Yes	Array of strings	<p>Specifies the list of AZs where the load balancer can be created. 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>

Parameter	Mandatory	Type	Description
enterprise_project_id	No	String	Specifies the ID of the enterprise project that the load balancer belongs to. The value cannot be "", "0", or the ID of an enterprise project that does not exist. If this parameter is not passed during resource creation, the resource belongs to the default enterprise project, and 0 will be returned.
tags	No	Array of Tag objects	Lists the tags added to the load balancer. Example: "tags": [{"key": "my_tag", "value": "my_tag_value"}]
admin_state_up	No	Boolean	Specifies whether to enable the load balancer. <ul style="list-style-type: none">• true (default): indicates the load balancer is enabled.• false: indicates the load balancer is disabled. The value must be in the Boolean type.
ipv6_bandwidth	No	BandwidthRef object	Specifies the ID of the bandwidth used by an IPv6 address. This parameter is available only when you create or update a load balancer with a public IPv6 address. If you use a new IPv6 address and specify a shared bandwidth, the IPv6 address will be added to the shared bandwidth.
publicip_ids	No	Array of strings	Specifies the ID of the EIP the system will automatically assign and bind to the load balancer during load balancer creation. Only the first EIP will be bound to the load balancer although multiple EIP IDs can be set.

Parameter	Mandatory	Type	Description
publicip	No	CreateLoadBalancerPublicIpOption object	Specifies the new EIP that will be bound to the load balancer.
elb_virsubnet_ids	No	Array of strings	<p>Specifies the IDs of subnets on the downstream plane. You can query parameter neutron_network_id in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets).</p> <p>If this parameter is not specified, select subnets as follows:</p> <ul style="list-style-type: none"> • If IPv6 is enabled for a load balancer, the ID of subnet specified in ipv6_vip_virsubnet_id will be used. • If IPv4 is enabled for a load balancer, the ID of subnet specified in vip_subnet_cidr_id will be used. • If only public network is available for a load balancer, the ID of any subnet in the VPC where the load balancer resides will be used. Subnets with more IP addresses are preferred. <p>If there is more than one subnet, the first subnet in the list will be used.</p> <p>Note:</p> <ul style="list-style-type: none"> • All subnets belong to the same VPC where the load balancer resides. • Edge subnets are not supported.

Parameter	Mandatory	Type	Description
ip_target_enable	No	Boolean	<p>Specifies whether to enable the IP as a Backend option.</p> <p>If you enable this function, you can add servers in a peer VPC connected through a VPC peering connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using their IP addresses.</p> <p>The value can be true (enable IP as a Backend) or false (disable IP as a Backend).</p> <p>Note:</p> <ul style="list-style-type: none">• The value can only be updated to true.
deletion_protection_enable	No	Boolean	<p>Specifies whether to enable deletion protection for the load balancer.</p> <ul style="list-style-type: none">• true: Enable deletion protection.• false (default): Disable deletion protection. <p>NOTE</p> <p>Disable deletion protection for all your resources before deleting your account.</p> <p>This parameter is unsupported. Please do not use it.</p>

Parameter	Mandatory	Type	Description
autoscaling	No	CreateLoadBalancerAutoscalingOption object	<p>Specifies the information about elastic scaling. If elastic scaling is enabled, the load balancer specifications can be automatically adjusted based on incoming traffic.</p> <p>Note:</p> <ul style="list-style-type: none"> This parameter is only available for users on the whitelist. If elastic scaling is enabled, l4_flavor_id indicates the maximum Layer-4 flavor for elastic scaling. l7_flavor_id indicates the maximum Layer-7 flavor for elastic scaling. <p>This parameter is unsupported. Please do not use it.</p>
ipv6_vip_address	No	String	Specifies the IPv6 address bound to the load balancer.

Table 4-38 Tag

Parameter	Mandatory	Type	Description
key	No	String	Specifies the tag key. Minimum: 1 Maximum: 36
value	No	String	Specifies the tag value. Minimum: 0 Maximum: 43

Table 4-39 BandwidthRef

Parameter	Mandatory	Type	Description
id	Yes	String	Specifies the shared bandwidth ID.

Table 4-40 CreateLoadBalancerPublicIpOption

Parameter	Mandatory	Type	Description
ip_version	No	Integer	Specifies the IP address version. The value can be 4 (IPv4) or 6 (IPv6). The default value is 4 . Default: 4
network_type	Yes	String	Specifies the EIP type. The default value is 5_bgp . For more information, see the API for assigning an EIP in the <i>Virtual Private Cloud API Reference</i> . Minimum: 1 Maximum: 36
billing_info	No	String	Provides billing information about the EIP. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 1024
description	No	String	Provides supplementary information about the EIP. Minimum: 1 Maximum: 255
bandwidth	Yes	CreateLoadBalancerBandwidthOption object	Provides supplementary information about the bandwidth.

Table 4-41 CreateLoadBalancerBandwidthOption

Parameter	Mandatory	Type	Description
name	No	String	<p>Specifies the bandwidth name.</p> <p>The value can contain 1 to 64 characters, including letters, digits, underscores (_), hyphens (-), and periods.</p> <p>Note:</p> <ul style="list-style-type: none">• This parameter is mandatory if share_type is set to PER.• This parameter will be ignored if the bandwidth reference has a specific ID. <p>Minimum: 1 Maximum: 64</p>
size	No	Integer	<p>Specifies the bandwidth range.</p> <p>The default range is 1 Mbit/s to 2,000 Mbit/s. (The specific range may vary depending on the configuration in each region. You can see the available bandwidth range on the management console.)</p> <p>Note:</p> <p>The minimum increment for bandwidth adjustment varies depending on the bandwidth range. The following are the details:</p> <ul style="list-style-type: none">• The minimum increment is 1 Mbit/s if the bandwidth range is from 0 Mbit/s to 300 Mbit/s.• The minimum increment is 50 Mbit/s if the bandwidth range is from 301 Mbit/s to 1,000 Mbit/s.• The minimum increment is 500 Mbit/s if the bandwidth is greater than 1,000 Mbit/s. <p>This parameter is mandatory if id is set to null.</p> <p>Minimum: 0 Maximum: 99999</p>

Parameter	Mandatory	Type	Description
charge_mode	No	String	Specifies how the bandwidth used by the EIP is billed. Currently, the bandwidth can be billed only by traffic . This parameter is mandatory if id is set to null . Minimum: 1 Maximum: 36
share_type	No	String	Specifies the bandwidth type. <ul style="list-style-type: none">• PER: indicates dedicated bandwidth.• WHOLE: indicates shared bandwidth. Note: <ul style="list-style-type: none">• This parameter is mandatory when id is set to null. It will be ignored if the value of id is not null.• The bandwidth ID must be specified if the bandwidth type is set to WHOLE.• The bandwidth type cannot be WHOLE for IPv6 EIPs.
billing_info	No	String	Specifies bandwidth billing information. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 1024
id	No	String	Specifies the ID of the shared bandwidth to which the IP address bound to the load balancer is added. Note: <ul style="list-style-type: none">• The value is the bandwidth ID when share_type is set to WHOLE. Minimum: 1 Maximum: 36

Table 4-42 CreateLoadbalancerAutoscalingOption

Parameter	Mandatory	Type	Description
enable	Yes	Boolean	Specifies whether to enable elastic scaling for the load balancer. Default: false
min_l7_flavor_id	No	String	Specifies the ID of the minimum Layer-7 flavor for elastic scaling. This parameter cannot be left blank if there are HTTP or HTTPS listeners. Minimum: 1 Maximum: 36

Response Parameters

Status code: 201

Table 4-43 Response body parameters

Parameter	Type	Description
loadbalancer	LoadBalancer object	Specifies the load balancer.
loadbalancer_id	String	Specifies the load balancer ID. This parameter is unsupported. Please do not use it. Minimum: 0 Maximum: 36
order_id	String	Specifies the order No. This parameter is unsupported. Please do not use it. Minimum: 0 Maximum: 36
request_id	String	Specifies the request ID. The value is automatically generated. Minimum: 0 Maximum: 36

Table 4-44 LoadBalancer

Parameter	Type	Description
id	String	Specifies the load balancer ID.
description	String	Provides supplementary information about the load balancer. Minimum: 1 Maximum: 255
provisioning_status	String	Specifies the provisioning status of the load balancer. The value can be one of the following: <ul style="list-style-type: none">• ACTIVE: The load balancer is successfully provisioned.• PENDING_DELETE: The load balancer is being deleted.
admin_state_up	Boolean	Specifies the administrative status of the load balancer. The value can be true or false . true indicates the load balancer is enabled and false indicates the load balancer is disabled.
provider	String	Specifies the provider of the load balancer. The value can only be vlb .
pools	Array of PoolRef objects	Lists the IDs of backend server groups associated with the load balancer.
listeners	Array of ListenerRef objects	Lists the IDs of listeners added to the load balancer.
operating_status	String	Specifies the operating status of the load balancer. The value can only be ONLINE , indicating that the load balancer is running normally.
name	String	Specifies the load balancer name.
project_id	String	Specifies the project ID of the load balancer.
vip_subnet_cidr_id	String	Specifies the ID of the IPv4 subnet where the load balancer resides.
vip_address	String	Specifies the private IPv4 address bound to the load balancer.
vip_port_id	String	Specifies the ID of the port bound to the private IPv4 address of the load balancer.
tags	Array of Tag objects	Lists the tags added to the load balancer.

Parameter	Type	Description
created_at	String	Specifies the time when the load balancer was created, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> .
updated_at	String	Specifies the time when the load balancer was updated, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> .
guaranteed	Boolean	Specifies whether the load balancer is a dedicated load balancer. <ul style="list-style-type: none">• true (default): The load balancer is a dedicated load balancer.• false: The load balancer is a shared load balancer.
vpc_id	String	Specifies the ID of the VPC where the load balancer resides.
eips	Array of EipInfo objects	Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer. This parameter has the same meaning as publicips .
ipv6_vip_address	String	Specifies the IPv6 address bound to the load balancer.
ipv6_vip_virusubnet_id	String	Specifies the ID of the IPv6 subnet where the load balancer resides.
ipv6_vip_port_id	String	Specifies the ID of the port bound to the IPv6 address of the load balancer.
availability_zone_list	Array of strings	Specifies the list of AZs where the load balancer is created.
enterprise_project_id	String	Specifies the enterprise project ID. If this parameter is not passed during resource creation, "0" will be returned, and the resource belongs to the default enterprise project. "0" is not a valid enterprise project ID and cannot be used in the APIs for creating, updating the load balancer, or querying details of the load balancer.
billing_info	String	Provides resource billing information. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 1024

Parameter	Type	Description
l4_flavor_id	String	Specifies the ID of a flavor at Layer 4. Minimum: 1 Maximum: 255
l4_scale_flavor_id	String	Specifies the ID of the reserved flavor at Layer 4. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255
l7_flavor_id	String	Specifies the ID of a flavor at Layer 7. Minimum: 1 Maximum: 255
l7_scale_flavor_id	String	Specifies the ID of the reserved flavor at Layer 7. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255
publicips	Array of PublicIpInfo objects	Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer. This parameter has the same meaning as eips .
global_eips	Array of GlobalEipInfo objects	Specifies the global EIP bound to the load balancer. Only the first global EIP specified under global_eips will be bound. This parameter is unsupported. Please do not use it.
elb_virsubnet_ids	Array of strings	Lists the IDs of subnets on the downstream plane.
elb_virsubnet_type	String	Specifies the type of the subnet on the downstream plane. <ul style="list-style-type: none"> • ipv4: IPv4 subnet • dualstack: subnet that supports IPv4/IPv6 dual stack

Parameter	Type	Description
ip_target_enable	Boolean	<p>Specifies whether to enable the IP as a Backend option.</p> <p>If you enable this function, you can add servers in a peer VPC connected through a VPC peering connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using their IP addresses.</p> <p>The value can be true (enable IP as a Backend) or false (disable IP as a Backend).</p> <p>Note:</p> <ul style="list-style-type: none">• The value can only be updated to true.
frozen_scene	String	<p>Specifies the scenario where the load balancer is frozen. Multiple values are separated using commas (,).</p> <p>This parameter is unsupported. Please do not use it.</p>
ipv6_bandwidth	BandwidthRef object	<p>Specifies the ID of the bandwidth used by an IPv6 address. This parameter is available only when you create or update a load balancer with a public IPv6 address. If you use a new IPv6 address and specify a shared bandwidth, the IPv6 address will be added to the shared bandwidth.</p>
deletion_protection_enable	Boolean	<p>Specifies whether deletion protection is enabled.</p> <ul style="list-style-type: none">• false: Deletion protection is not enabled.• true: Deletion protection is enabled. <p>NOTE Disable deletion protection for all your resources before deleting your account.</p> <p>This parameter is returned only when deletion protection is enabled at the site.</p> <p>This parameter is unsupported. Please do not use it.</p>

Parameter	Type	Description
autoscaling	AutoscalingRef object	<p>Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer specifications can be automatically adjusted based on incoming traffic.</p> <p>Note:</p> <ul style="list-style-type: none"> This parameter is only available for users on the whitelist. If elastic scaling is enabled, l4_flavor_id indicates the maximum Layer-4 flavor for elastic scaling. l7_flavor_id indicates the maximum Layer-7 flavor for elastic scaling. <p>This parameter is unsupported. Please do not use it.</p>
public_border_group	String	Specifies the AZ group to which the load balancer belongs.
charge_mode	String	<p>Specifies the charge mode when creating a load balancer. The value can be one of the following:</p> <ul style="list-style-type: none"> flavor: billed by the specifications you will select. lcu: billed by how many LCUs you have used. Note: <ul style="list-style-type: none"> If this parameter is not specified during the creation of a shared load balancer, the load balancer is free. If this parameter is not specified during the creation of a dedicated load balancer, the load balancer is billed by the specifications you have selected.
waf_failure_action	String	<p>Specifies traffic distributing policies when the WAF is faulty.</p> <ul style="list-style-type: none"> discard: Traffic will not be distributed. forward: Traffic will be distributed to the default backend servers. <p>Note: This parameter takes effect only when WAF is enabled for the load balancer.</p> <p>This parameter is unsupported. Please do not use it.</p>
log_group_id	String	Specifies the ID of the log group that is associated with the load balancer.
log_topic_id	String	Specifies the ID of the log topic that is associated with the load balancer.

Table 4-45 PoolRef

Parameter	Type	Description
id	String	Specifies the ID of the backend server group.

Table 4-46 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-47 Tag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: 1 Maximum: 36
value	String	Specifies the tag value. Minimum: 0 Maximum: 43

Table 4-48 EipInfo

Parameter	Type	Description
eip_id	String	eip_id
eip_address	String	eip_address
ip_version	Integer	Specifies the IP version. 4 indicates IPv4, and 6 indicates IPv6.

Table 4-49 PublicIpInfo

Parameter	Type	Description
publicip_id	String	Specifies the EIP ID.
publicip_address	String	Specifies the IP address.
ip_version	Integer	Specifies the IP version. The value can be 4 (IPv4) or 6 (IPv6).

Table 4-50 GlobalEipInfo

Parameter	Type	Description
global_eip_id	String	Specifies the ID of the global EIP.
global_eip_address	String	Specifies the global EIP.
ip_version	Integer	Specifies the IP version. The value can be 4 and 6 . 4 indicates an IPv4 address, and 6 indicates an IPv6 address.

Table 4-51 BandwidthRef

Parameter	Type	Description
id	String	Specifies the shared bandwidth ID.

Table 4-52 AutoscalingRef

Parameter	Type	Description
enable	Boolean	Specifies whether to enable elastic scaling for the load balancer. <ul style="list-style-type: none"> true: Enable elastic scaling. false (default): Disable elastic scaling.
min_l7_flavor_id	String	Specifies the ID of the minimum Layer-7 flavor for elastic scaling. This parameter cannot be left blank if there are HTTP or HTTPS listeners. Minimum: 1 Maximum: 36

Example Requests

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

```
POST https://{ELB_Endpoint}/v3/060576798a80d5762f9ec01a9b5eedc7/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 3: Creating a gateway load balancer**

POST https://{ELB_Endpoint}/v3/060576798a80d5762fafc01a9b5eedc7/elb/loadbalancers

```
{
  "loadbalancer" : {
    "name" : "loadbalancer",
    "description" : "simple gateway lb",
    "loadbalancer_type" : "gateway",
    "gw_flavor_id" : "2e859438-7cbb-417b-8f3b-5f618ca76a52",
    "vip_subnet_cidr_id" : "1992ec06-f364-4ae3-b936-6a8cc24633b7",
    "ipv6_vip_virsubnet_id" : "8e7aac33-0d87-4cb2-9cce-2856615d607f",
    "admin_state_up" : true,
    "availability_zone_list" : [ "AZ1" ]
  }
}
```

Example Responses

Status code: 201

Normal response to POST requests.

```
{
  "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"
}
```

Status Codes

Status Code	Description
201	Normal response to POST requests.

Error Codes

See [Error Codes](#).

4.6.2 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 4-53 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	This parameter has the same meaning as eips . Minimum: 1 Maximum: 255

Table 4-54 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the last record on the previous page. Note: <ul style="list-style-type: none">• This parameter must be used together with limit.• If this parameter is not specified, the first page will be queried.• This parameter cannot be left blank or set to an invalid ID.
limit	No	Integer	Specifies the number of records on each page. Minimum: 0 Maximum: 2000 Default: 2000

Parameter	Mandatory	Type	Description
page_reverse	No	Boolean	<p>Specifies whether to use reverse query. Values:</p> <ul style="list-style-type: none"> • true: Query the previous page. • false (default): Query the next page. <p>Note:</p> <ul style="list-style-type: none"> • This parameter must be used together with limit. • If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker.
id	No	Array	<p>Specifies the load balancer ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i>.</p>
name	No	Array	<p>Specifies the load balancer name. Multiple names can be queried in the format of <i>name=xxx&name=xxx</i>.</p>
description	No	Array	<p>Provides supplementary information about the load balancer. Multiple descriptions can be queried in the format of <i>description=xxx&description=xxx</i>.</p>
admin_state_up	No	Boolean	<p>Specifies whether to enable the load balancer.</p> <ul style="list-style-type: none"> • true: indicates the load balancer is enabled. • false: indicates the load balancer is disabled. <p>The value must be in the Boolean type.</p>

Parameter	Mandatory	Type	Description
provisioning_status	No	Array	<p>Specifies the provisioning status of the load balancer.</p> <ul style="list-style-type: none"> ● ACTIVE: The load balancer is successfully provisioned. ● PENDING_DELETE: The load balancer is being deleted. <p>Multiple provisioning statuses can be queried in the format of <i>provisioning_status=xxx&provisioning_status=xxx</i>.</p>
operating_status	No	Array	<p>Specifies the operating status of the load balancer.</p> <ul style="list-style-type: none"> ● ONLINE: The load balancer is working normally. ● FROZEN: The load balancer has been frozen. <p>Multiple operating statuses can be queried in the format of <i>operating_status=xxx&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"> ● false: The load balancer is a shared load balancer. ● true: The load balancer is a dedicated load balancer. <p>Only dedicated load balancers is supported. The value is fixed at true.</p>
loadbalancer_type	No	String	<p>Specifies the load balancer type. The type can be:</p> <ul style="list-style-type: none"> ● gateway: indicates a gateway load balancer. ● null (default): indicates other types of load balancers.

Parameter	Mandatory	Type	Description
vpc_id	No	Array	Specifies the ID of the VPC where the load balancer resides. Multiple IDs can be queried in the format of <i>vpc_id=xxx&vpc_id=xxx</i> .
vip_port_id	No	Array	Specifies the ID of the port bound to the private IPv4 address of the load balancer. Multiple IDs can be queried in the format of <i>vip_port_id=xxx&vip_port_id=xx</i> .
vip_address	No	Array	Specifies the virtual IP address bound to the load balancer. Multiple virtual IP addresses can be queried in the format of <i>vip_address=xxx&vip_address=xxx</i> .
vip_subnet_cidr_id	No	Array	Specifies the ID of the IPv4 subnet where the load balancer resides. Multiple IDs can be queried in the format of <i>vip_subnet_cidr_id=xxx&vip_subnet_cidr_id=xxx</i> .
ipv6_vip_port_id	No	Array	Specifies the ID of the port bound to the IPv6 address of the load balancer. Multiple ports can be queried in the format of <i>ipv6_vip_port_id=xxx&ipv6_vip_port_id=xxx</i> .
ipv6_vip_address	No	Array	Specifies the IPv6 address bound to the load balancer. Multiple IPv6 addresses can be queried in the format of <i>ipv6_vip_address=xxx&ipv6_vip_address=xxx</i> .

Parameter	Mandatory	Type	Description
ipv6_vip_virsubnet_id	No	Array	<p>Specifies the ID of the IPv6 subnet where the load balancer resides.</p> <p>Multiple IDs can be queried in the format of <i>ipv6_vip_virsubnet_id=xxx&ipv6_vip_virsubnet_id=xxx</i>.</p>
eips	No	Array	<p>Specifies the IPv4 EIP bound to the load balancer. The following is an example:</p> <pre>"eips": [{ "eip_id": "e9b72a9d-4275-455e-a724-853504e4d9c6", "eip_address": "88.88.14.122", "ip_version": 4 }]</pre> <p>Multiple EIPs can be queried.</p> <ul style="list-style-type: none"> • If eip_id is used as the query condition, the format is <i>eips=eip_id=xxx&eips=eip_id=xxx</i>. • If eip_address is used as the query condition, the format is <i>eips=eip_address=xxx&eips=eip_address=xxx</i>. • If ip_version is used as the query condition, the format is <i>eips=ip_version=xxx&eips=ip_version=xxx</i>. <p>Note that this parameter has the same meaning as publicips.</p>

Parameter	Mandatory	Type	Description
publicips	No	Array	<p>Specifies the IPv4 EIP bound to the load balancer. The following is an example:</p> <pre>"publicips": [{ "publicip_id": "e9b72a9d-4275-455e-a724-853504e4d9c6", "publicip_address": "88.88.14.122", "ip_version": 4 }]</pre> <p>Multiple EIPs can be queried.</p> <ul style="list-style-type: none"> • If publicip_id is used as the query condition, the format is <i>publicips=publicip_id=xxx&publicips=publicip_id=xxx.</i> • If publicip_address is used as the query condition, the format is <i>*publicips=publicip_address=xxx&publicips=publicip_address=xxx.</i> • If ip_version is used as the query condition, the format is <i>publicips=ip_version=xxx&publicips=ip_version=xxx.</i> <p>Note that this parameter has the same meaning as eips.</p>
availability_zone_list	No	Array	<p>Specifies the list of AZs where the load balancer is created.</p> <p>Multiple AZs can be queried in the format of <i>availability_zone_list=xxx&availability_zone_list=xxx.</i></p>
l4_flavor_id	No	Array	<p>Specifies the ID of a flavor at Layer 4.</p> <p>Multiple IDs can be queried in the format of <i>l4_flavor_id=xxx&l4_flavor_id=xxx.</i></p>

Parameter	Mandatory	Type	Description
<code>l4_scale_flavor_id</code>	No	Array	Specifies the ID of the elastic flavor at Layer 4, which is reserved for now. Multiple flavors can be queried in the format of <i>l4_scale_flavor_id=xxx&l4_scale_flavor_id=xxx</i> . This parameter is unsupported. Please do not use it.
<code>l7_flavor_id</code>	No	Array	Specifies the ID of a flavor at Layer 7. Multiple flavors can be queried in the format of <i>l7_flavor_id=xxx&l7_flavor_id=xxx</i> .
<code>l7_scale_flavor_id</code>	No	Array	Specifies the ID of the elastic flavor at Layer 7. Multiple flavors can be queried in the format of <i>l7_scale_flavor_id=xxx&l7_scale_flavor_id=xxx</i> . This parameter is unsupported. Please do not use it.
<code>member_device_id</code>	No	Array	Specifies the ID of the cloud server that is associated with the load balancer as a backend server. This is a query parameter and will not be included in the response. Multiple IDs can be queried in the format of <i>member_device_id=xxx&member_device_id=xxx</i> .
<code>member_address</code>	No	Array	Specifies the private IP address of the cloud server that is associated with the load balancer as a backend server. This is a query parameter and will not be included in the response. Multiple private IP addresses can be queried in the format of <i>member_address=xxx&member_address=xxx</i> .

Parameter	Mandatory	Type	Description
enterprise_project_id	No	Array	<p>Specifies the enterprise project ID.</p> <ul style="list-style-type: none"> If this parameter is not passed, resources in the default enterprise project are queried, and authentication is performed based on the default enterprise project. If this parameter is passed, its value can be the ID of an existing enterprise project (resources in the specific enterprise project are required) or all_granted_eps (resources in all enterprise projects are queried). <p>Multiple IDs can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p>
ip_version	No	Array	<p>Specifies the IP version. The value can be 4 (IPv4) or 6 (IPv6).</p> <p>Multiple versions can be queried in the format of <i>ip_version=xxx&ip_version=xxx</i>.</p>
deletion_protection_enable	No	Boolean	<p>Specifies whether to enable deletion protection.</p> <ul style="list-style-type: none"> true: Enable deletion protection. false: Disable deletion protection. <p>This parameter is unsupported. Please do not use it.</p>

Parameter	Mandatory	Type	Description
elb_virsubnet_type	No	Array	Specifies the type of the subnet on the downstream plane. <ul style="list-style-type: none"> • ipv4: IPv4 subnet • dualstack: subnet that supports IPv4/IPv6 dual stack Multiple values query can be queried in the format of <i>elb_virsubnet_type=ipv4&elb_virsubnet_type=dualstack</i> .
autoscaling	No	Array	Specifies whether to enable elastic scaling. Example: "autoscaling": { "enable": "true" } <p>Multiple values query can be queried in the format of <i>autoscaling=enable=true&autoscaling=enable=false</i>.</p> This parameter is unsupported. Please do not use it.
log_topic_id	No	String	Specifies the ID of the log group that is associated with the load balancer. Multiple IDs can be queried in the format of <i>log_topic_id=xxx&log_topic_id=xxx</i> .
log_group_id	No	String	Specifies the ID of the log topic that is associated with the load balancer. Multiple IDs can be queried in the format of <i>log_group_id=xxx&log_group_id=xxx</i> .

Request Parameters

Table 4-55 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 4-56 Response body parameters

Parameter	Type	Description
loadbalancers	Array of LoadBalancer objects	Lists the load balancers.
page_info	PageInfo object	Shows pagination information about load balancers.
request_id	String	Specifies the request ID. The value is automatically generated.

Table 4-57 LoadBalancer

Parameter	Type	Description
id	String	Specifies the load balancer ID.
description	String	Provides supplementary information about the load balancer. Minimum: 1 Maximum: 255
provisioning_status	String	Specifies the provisioning status of the load balancer. The value can be one of the following: <ul style="list-style-type: none">• ACTIVE: The load balancer is successfully provisioned.• PENDING_DELETE: The load balancer is being deleted.
admin_state_up	Boolean	Specifies the administrative status of the load balancer. The value can be true or false . true indicates the load balancer is enabled and false indicates the load balancer is disabled.
provider	String	Specifies the provider of the load balancer. The value can only be vlb .
pools	Array of PoolRef objects	Lists the IDs of backend server groups associated with the load balancer.

Parameter	Type	Description
listeners	Array of ListenerRef objects	Lists the IDs of listeners added to the load balancer.
operating_status	String	Specifies the operating status of the load balancer. The value can only be ONLINE , indicating that the load balancer is running normally.
name	String	Specifies the load balancer name.
project_id	String	Specifies the project ID of the load balancer.
vip_subnet_cidr_id	String	Specifies the ID of the IPv4 subnet where the load balancer resides.
vip_address	String	Specifies the private IPv4 address bound to the load balancer.
vip_port_id	String	Specifies the ID of the port bound to the private IPv4 address of the load balancer.
tags	Array of Tag objects	Lists the tags added to the load balancer.
created_at	String	Specifies the time when the load balancer was created, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> .
updated_at	String	Specifies the time when the load balancer was updated, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> .
guaranteed	Boolean	Specifies whether the load balancer is a dedicated load balancer. <ul style="list-style-type: none">● true (default): The load balancer is a dedicated load balancer.● false: The load balancer is a shared load balancer.
vpc_id	String	Specifies the ID of the VPC where the load balancer resides.
eips	Array of EipInfo objects	Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer. This parameter has the same meaning as publicips .
ipv6_vip_address	String	Specifies the IPv6 address bound to the load balancer.
ipv6_vip_virtual_subnet_id	String	Specifies the ID of the IPv6 subnet where the load balancer resides.

Parameter	Type	Description
ipv6_vip_port_id	String	Specifies the ID of the port bound to the IPv6 address of the load balancer.
availability_zone_list	Array of strings	Specifies the list of AZs where the load balancer is created.
enterprise_project_id	String	Specifies the enterprise project ID. If this parameter is not passed during resource creation, "0" will be returned, and the resource belongs to the default enterprise project. "0" is not a valid enterprise project ID and cannot be used in the APIs for creating, updating the load balancer, or querying details of the load balancer.
billing_info	String	Provides resource billing information. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 1024
l4_flavor_id	String	Specifies the ID of a flavor at Layer 4. Minimum: 1 Maximum: 255
l4_scale_flavor_id	String	Specifies the ID of the reserved flavor at Layer 4. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255
l7_flavor_id	String	Specifies the ID of a flavor at Layer 7. Minimum: 1 Maximum: 255
l7_scale_flavor_id	String	Specifies the ID of the reserved flavor at Layer 7. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255
publicips	Array of PublicIpInfo objects	Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer. This parameter has the same meaning as eips .

Parameter	Type	Description
global_eips	Array of GlobalEipInfo objects	Specifies the global EIP bound to the load balancer. Only the first global EIP specified under global_eips will be bound. This parameter is unsupported. Please do not use it.
elb_virsubnet_ids	Array of strings	Lists the IDs of subnets on the downstream plane.
elb_virsubnet_type	String	Specifies the type of the subnet on the downstream plane. <ul style="list-style-type: none"> ● ipv4: IPv4 subnet ● dualstack: subnet that supports IPv4/IPv6 dual stack
ip_target_enable	Boolean	Specifies whether to enable the IP as a Backend option. If you enable this function, you can add servers in a peer VPC connected through a VPC peering connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using their IP addresses. The value can be true (enable IP as a Backend) or false (disable IP as a Backend). Note: <ul style="list-style-type: none"> ● The value can only be updated to true.
frozen_scene	String	Specifies the scenario where the load balancer is frozen. Multiple values are separated using commas (.). This parameter is unsupported. Please do not use it.
ipv6_bandwidth	BandwidthRef object	Specifies the ID of the bandwidth used by an IPv6 address. This parameter is available only when you create or update a load balancer with a public IPv6 address. If you use a new IPv6 address and specify a shared bandwidth, the IPv6 address will be added to the shared bandwidth.

Parameter	Type	Description
deletion_protection_enable	Boolean	<p>Specifies whether deletion protection is enabled.</p> <ul style="list-style-type: none"> ● false: Deletion protection is not enabled. ● true: Deletion protection is enabled. <p>NOTE Disable deletion protection for all your resources before deleting your account.</p> <p>This parameter is returned only when deletion protection is enabled at the site.</p> <p>This parameter is unsupported. Please do not use it.</p>
autoscaling	AutoscalingRef object	<p>Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer specifications can be automatically adjusted based on incoming traffic.</p> <p>Note:</p> <ul style="list-style-type: none"> ● This parameter is only available for users on the whitelist. ● If elastic scaling is enabled, l4_flavor_id indicates the maximum Layer-4 flavor for elastic scaling. l7_flavor_id indicates the maximum Layer-7 flavor for elastic scaling. <p>This parameter is unsupported. Please do not use it.</p>
public_border_group	String	<p>Specifies the AZ group to which the load balancer belongs.</p>
charge_mode	String	<p>Specifies the charge mode when creating a load balancer. The value can be one of the following:</p> <ul style="list-style-type: none"> ● flavor: billed by the specifications you will select. ● lcu: billed by how many LCUs you have used. Note: ● If this parameter is not specified during the creation of a shared load balancer, the load balancer is free. ● If this parameter is not specified during the creation of a dedicated load balancer, the load balancer is billed by the specifications you have selected.

Parameter	Type	Description
waf_failure_action	String	Specifies traffic distributing policies when the WAF is faulty. <ul style="list-style-type: none"> ● discard: Traffic will not be distributed. ● forward: Traffic will be distributed to the default backend servers. <p>Note: This parameter takes effect only when WAF is enabled for the load balancer.</p> <p>This parameter is unsupported. Please do not use it.</p>
log_group_id	String	Specifies the ID of the log group that is associated with the load balancer.
log_topic_id	String	Specifies the ID of the log topic that is associated with the load balancer.

Table 4-58 PoolRef

Parameter	Type	Description
id	String	Specifies the ID of the backend server group.

Table 4-59 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-60 Tag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: 1 Maximum: 36
value	String	Specifies the tag value. Minimum: 0 Maximum: 43

Table 4-61 EipInfo

Parameter	Type	Description
eip_id	String	eip_id
eip_address	String	eip_address
ip_version	Integer	Specifies the IP version. 4 indicates IPv4, and 6 indicates IPv6.

Table 4-62 PublicIpInfo

Parameter	Type	Description
publicip_id	String	Specifies the EIP ID.
publicip_address	String	Specifies the IP address.
ip_version	Integer	Specifies the IP version. The value can be 4 (IPv4) or 6 (IPv6).

Table 4-63 GlobalEipInfo

Parameter	Type	Description
global_eip_id	String	Specifies the ID of the global EIP.
global_eip_address	String	Specifies the global EIP.
ip_version	Integer	Specifies the IP version. The value can be 4 and 6 . 4 indicates an IPv4 address, and 6 indicates an IPv6 address.

Table 4-64 BandwidthRef

Parameter	Type	Description
id	String	Specifies the shared bandwidth ID.

Table 4-65 AutoscalingRef

Parameter	Type	Description
enable	Boolean	Specifies whether to enable elastic scaling for the load balancer. <ul style="list-style-type: none"> ● true: Enable elastic scaling. ● false (default): Disable elastic scaling.
min_l7_flavor_id	String	Specifies the ID of the minimum Layer-7 flavor for elastic scaling. This parameter cannot be left blank if there are HTTP or HTTPS listeners. Minimum: 1 Maximum: 36

Table 4-66 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

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",
    "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",
  "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_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
}
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.6.3 Viewing Details of a Load Balancer

Function

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

Calling Method

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

URI

GET /v3/{project_id}/elb/loadbalancers/{loadbalancer_id}

Table 4-67 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
loadbalancer_id	Yes	String	Specifies the load balancer ID.

Request Parameters

Table 4-68 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-69 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
loadbalancer	LoadBalancer object	Specifies the load balancer.

Table 4-70 LoadBalancer

Parameter	Type	Description
id	String	Specifies the load balancer ID.
description	String	Provides supplementary information about the load balancer. Minimum: 1 Maximum: 255

Parameter	Type	Description
provisioning_status	String	Specifies the provisioning status of the load balancer. The value can be one of the following: <ul style="list-style-type: none">• ACTIVE: The load balancer is successfully provisioned.• PENDING_DELETE: The load balancer is being deleted.
admin_state_up	Boolean	Specifies the administrative status of the load balancer. The value can be true or false . true indicates the load balancer is enabled and false indicates the load balancer is disabled.
provider	String	Specifies the provider of the load balancer. The value can only be vlb .
pools	Array of PoolRef objects	Lists the IDs of backend server groups associated with the load balancer.
listeners	Array of ListenerRef objects	Lists the IDs of listeners added to the load balancer.
operating_status	String	Specifies the operating status of the load balancer. The value can only be ONLINE , indicating that the load balancer is running normally.
name	String	Specifies the load balancer name.
project_id	String	Specifies the project ID of the load balancer.
vip_subnet_cidr_id	String	Specifies the ID of the IPv4 subnet where the load balancer resides.
vip_address	String	Specifies the private IPv4 address bound to the load balancer.
vip_port_id	String	Specifies the ID of the port bound to the private IPv4 address of the load balancer.
tags	Array of Tag objects	Lists the tags added to the load balancer.
created_at	String	Specifies the time when the load balancer was created, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> .
updated_at	String	Specifies the time when the load balancer was updated, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> .

Parameter	Type	Description
guaranteed	Boolean	Specifies whether the load balancer is a dedicated load balancer. <ul style="list-style-type: none"> • true (default): The load balancer is a dedicated load balancer. • false: The load balancer is a shared load balancer.
vpc_id	String	Specifies the ID of the VPC where the load balancer resides.
eips	Array of EipInfo objects	Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer. This parameter has the same meaning as publicips .
ipv6_vip_address	String	Specifies the IPv6 address bound to the load balancer.
ipv6_vip_virusubnet_id	String	Specifies the ID of the IPv6 subnet where the load balancer resides.
ipv6_vip_port_id	String	Specifies the ID of the port bound to the IPv6 address of the load balancer.
availability_zone_list	Array of strings	Specifies the list of AZs where the load balancer is created.
enterprise_project_id	String	Specifies the enterprise project ID. If this parameter is not passed during resource creation, "0" will be returned, and the resource belongs to the default enterprise project. "0" is not a valid enterprise project ID and cannot be used in the APIs for creating, updating the load balancer, or querying details of the load balancer.
billing_info	String	Provides resource billing information. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 1024
l4_flavor_id	String	Specifies the ID of a flavor at Layer 4. Minimum: 1 Maximum: 255

Parameter	Type	Description
l4_scale_flavor_id	String	Specifies the ID of the reserved flavor at Layer 4. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255
l7_flavor_id	String	Specifies the ID of a flavor at Layer 7. Minimum: 1 Maximum: 255
l7_scale_flavor_id	String	Specifies the ID of the reserved flavor at Layer 7. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255
publicips	Array of PublicIpInfo objects	Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer. This parameter has the same meaning as eips .
global_eips	Array of GlobalEipInfo objects	Specifies the global EIP bound to the load balancer. Only the first global EIP specified under global_eips will be bound. This parameter is unsupported. Please do not use it.
elb_virsubnet_ids	Array of strings	Lists the IDs of subnets on the downstream plane.
elb_virsubnet_type	String	Specifies the type of the subnet on the downstream plane. <ul style="list-style-type: none">• ipv4: IPv4 subnet• dualstack: subnet that supports IPv4/IPv6 dual stack

Parameter	Type	Description
ip_target_enable	Boolean	<p>Specifies whether to enable the IP as a Backend option.</p> <p>If you enable this function, you can add servers in a peer VPC connected through a VPC peering connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using their IP addresses.</p> <p>The value can be true (enable IP as a Backend) or false (disable IP as a Backend).</p> <p>Note:</p> <ul style="list-style-type: none"> The value can only be updated to true.
frozen_scene	String	<p>Specifies the scenario where the load balancer is frozen. Multiple values are separated using commas (,).</p> <p>This parameter is unsupported. Please do not use it.</p>
ipv6_bandwidth	BandwidthRef object	<p>Specifies the ID of the bandwidth used by an IPv6 address. This parameter is available only when you create or update a load balancer with a public IPv6 address. If you use a new IPv6 address and specify a shared bandwidth, the IPv6 address will be added to the shared bandwidth.</p>
deletion_protection_enable	Boolean	<p>Specifies whether deletion protection is enabled.</p> <ul style="list-style-type: none"> false: Deletion protection is not enabled. true: Deletion protection is enabled. <p>NOTE Disable deletion protection for all your resources before deleting your account.</p> <p>This parameter is returned only when deletion protection is enabled at the site.</p> <p>This parameter is unsupported. Please do not use it.</p>

Parameter	Type	Description
autoscaling	AutoscalingRef object	<p>Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer specifications can be automatically adjusted based on incoming traffic.</p> <p>Note:</p> <ul style="list-style-type: none"> This parameter is only available for users on the whitelist. If elastic scaling is enabled, l4_flavor_id indicates the maximum Layer-4 flavor for elastic scaling. l7_flavor_id indicates the maximum Layer-7 flavor for elastic scaling. <p>This parameter is unsupported. Please do not use it.</p>
public_border_group	String	Specifies the AZ group to which the load balancer belongs.
charge_mode	String	<p>Specifies the charge mode when creating a load balancer. The value can be one of the following:</p> <ul style="list-style-type: none"> flavor: billed by the specifications you will select. lcu: billed by how many LCUs you have used. Note: <ul style="list-style-type: none"> If this parameter is not specified during the creation of a shared load balancer, the load balancer is free. If this parameter is not specified during the creation of a dedicated load balancer, the load balancer is billed by the specifications you have selected.
waf_failure_action	String	<p>Specifies traffic distributing policies when the WAF is faulty.</p> <ul style="list-style-type: none"> discard: Traffic will not be distributed. forward: Traffic will be distributed to the default backend servers. <p>Note: This parameter takes effect only when WAF is enabled for the load balancer.</p> <p>This parameter is unsupported. Please do not use it.</p>
log_group_id	String	Specifies the ID of the log group that is associated with the load balancer.
log_topic_id	String	Specifies the ID of the log topic that is associated with the load balancer.

Table 4-71 PoolRef

Parameter	Type	Description
id	String	Specifies the ID of the backend server group.

Table 4-72 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-73 Tag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: 1 Maximum: 36
value	String	Specifies the tag value. Minimum: 0 Maximum: 43

Table 4-74 EipInfo

Parameter	Type	Description
eip_id	String	eip_id
eip_address	String	eip_address
ip_version	Integer	Specifies the IP version. 4 indicates IPv4, and 6 indicates IPv6.

Table 4-75 PublicIpInfo

Parameter	Type	Description
publicip_id	String	Specifies the EIP ID.
publicip_address	String	Specifies the IP address.
ip_version	Integer	Specifies the IP version. The value can be 4 (IPv4) or 6 (IPv6).

Table 4-76 GlobalEipInfo

Parameter	Type	Description
global_eip_id	String	Specifies the ID of the global EIP.
global_eip_address	String	Specifies the global EIP.
ip_version	Integer	Specifies the IP version. The value can be 4 and 6 . 4 indicates an IPv4 address, and 6 indicates an IPv6 address.

Table 4-77 BandwidthRef

Parameter	Type	Description
id	String	Specifies the shared bandwidth ID.

Table 4-78 AutoscalingRef

Parameter	Type	Description
enable	Boolean	Specifies whether to enable elastic scaling for the load balancer. <ul style="list-style-type: none">• true: Enable elastic scaling.• false (default): Disable elastic scaling.
min_l7_flavor_id	String	Specifies the ID of the minimum Layer-7 flavor for elastic scaling. This parameter cannot be left blank if there are HTTP or HTTPS listeners. Minimum: 1 Maximum: 36

Example Requests

Querying 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"
}

```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.6.4 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 4-79 Path Parameters

Parameter	Mandatory	Type	Description
loadbalancer_id	Yes	String	Specifies the load balancer ID. Minimum: 0 Maximum: 36
project_id	Yes	String	Specifies the project ID. Minimum: 0 Maximum: 36

Request Parameters

Table 4-80 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication. Minimum: 0 Maximum: 4096

Table 4-81 Request body parameters

Parameter	Mandatory	Type	Description
loadbalancer	Yes	UpdateLoadBalancerOption object	Specifies the load balancer.

Table 4-82 UpdateLoadBalancerOption

Parameter	Mandatory	Type	Description
name	No	String	Specifies the load balancer name. Minimum: 0 Maximum: 255
admin_state_up	No	Boolean	Specifies whether to enable the load balancer. <ul style="list-style-type: none">• true: The load balancer is enabled.• false: The load balancer is disabled.
description	No	String	Provides supplementary information about the load balancer. Minimum: 0 Maximum: 255

Parameter	Mandatory	Type	Description
ipv6_vip_virsubnet_id	No	String	<p>Specifies the ID of the IPv6 subnet where the load balancer resides. You can query parameter id in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets).</p> <p>The IPv6 subnet can be updated using ipv6_vip_virsubnet_id, and the private IPv6 address of the load balancer will be changed accordingly.</p> <p>Note:</p> <ul style="list-style-type: none">• This parameter will be passed only when IPv6 is enabled for the subnet. The subnet specified by ipv6_vip_virsubnet_id must be in the VPC specified by vpc_id.• This parameter can be updated only when guaranteed is set to true.• The value will become null if the IPv6 address is unbound from the load balancer.• The IPv4 subnet will not change, if IPv6 subnet is updated.

Parameter	Mandatory	Type	Description
<code>vip_subnet_cidr_id</code>	No	String	<p>Specifies the ID of the IPv4 subnet where the load balancer resides. You can query parameter neutron_subnet_id in the response by calling the API (GET <code>https://{VPC_Endpoint}/v1/{project_id}/subnets</code>).</p> <ul style="list-style-type: none">• The IPv4 subnet can be updated using vip_subnet_cidr_id, and the private IPv4 address of the load balancer will be changed accordingly. Note:• If vip_address is also specified, the IP address specified by vip_address must be in the subnet specified by vip_subnet_cidr_id and will be used as the private IPv4 address of the load balancer.• The IPv4 subnet must be in the VPC where the load balancer resides.• This parameter can be updated only when guaranteed is set to true.• The value will become null if the private IPv4 address is unbound from the load balancer.• The IPv6 subnet will not change, if IPv4 subnet is updated. <p>Minimum: 1 Maximum: 36</p>

Parameter	Mandatory	Type	Description
vip_address	No	String	Specifies the private IPv4 address bound to the load balancer. The IP address must be from the IPv4 subnet where the load balancer resides and should not be occupied by other services. vip_address can be updated only when guaranteed is set to true . Minimum: 1 Maximum: 36
l4_flavor_id	No	String	Specifies the ID of a flavor at Layer 4. Note: Minimum: 1 Maximum: 255
l7_flavor_id	No	String	Specifies the ID of a flavor at Layer 7. Note: Minimum: 1 Maximum: 36
gw_flavor_id	No	String	Specifies the flavor ID of the gateway load balancer. If gw_flavor_id is not specified, the default flavor is used. The default flavor varies by site. Minimum: 1 Maximum: 36
ipv6_bandwidth	No	BandwidthRef object	Specifies the ID of the bandwidth used by an IPv6 address. This parameter is available only when you create or update a load balancer with a public IPv6 address. If you use a new IPv6 address and specify a shared bandwidth, the IPv6 address will be added to the shared bandwidth.

Parameter	Mandatory	Type	Description
ip_target_enable	No	Boolean	<p>Specifies whether to enable the IP as a Backend option.</p> <p>If you enable this function, you can add servers in a peer VPC connected through a VPC peering connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using their IP addresses.</p> <p>The value can be true (enable IP as a Backend) or false (disable IP as a Backend).</p> <p>Note:</p> <ul style="list-style-type: none">• The value can only be updated to true.

Parameter	Mandatory	Type	Description
elb_virsubnet_ids	No	Array of strings	<p>Specifies the IDs of subnets on the downstream plane. You can query parameter neutron_network_id in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets).</p> <ul style="list-style-type: none"> • If the IDs of the subnets required by the load balancer are specified in elb_virsubnet_ids, the subnets will still be bound to the load balancer. • If the IDs of the subnets are specified in elb_virsubnet_ids, but not on the downstream plane, a new load balancer will be bound to the downstream plane. • If the IDs of the subnets required by the load balancer are not specified in elb_virsubnet_ids, the subnets will be unbound from the load balancers. Do not unbound the subnets that have been used by the load balancer. Otherwise, an error will be returned. <p>Note:</p> <ul style="list-style-type: none"> • All subnets belong to the same VPC where the load balancer resides. • Edge subnets are not supported. <p>Minimum: 1 Maximum: 64 Array Length: 0 - 64</p>

Parameter	Mandatory	Type	Description
deletion_protection_enable	No	Boolean	<p>Specifies whether to enable deletion protection for the load balancer.</p> <ul style="list-style-type: none"> • true: Enable deletion protection. • false: Disable deletion protection. <p>NOTE Disable deletion protection for all your resources before deleting your account.</p> <p>This parameter is unsupported. Please do not use it.</p>
autoscaling	No	UpdateLoadBalancerAutoscalingOption object	<p>Specifies the information about elastic scaling. If elastic scaling is enabled, the load balancer specifications can be automatically adjusted based on incoming traffic.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter is only available for users on the whitelist. • If elastic scaling is enabled, l4_flavor_id indicates the maximum Layer-4 flavor for elastic scaling. l7_flavor_id indicates the maximum Layer-7 flavor for elastic scaling. <p>This parameter is unsupported. Please do not use it.</p>
ipv6_vip_address	No	String	Specifies the IPv6 address bound to the load balancer.

Table 4-83 BandwidthRef

Parameter	Mandatory	Type	Description
id	Yes	String	Specifies the shared bandwidth ID.

Table 4-84 UpdateLoadbalancerAutoscalingOption

Parameter	Mandatory	Type	Description
enable	Yes	Boolean	Specifies whether to enable elastic scaling the load balancer. The options are as follows: <ul style="list-style-type: none">• true: Enable deletion protection.• false: Disable deletion protection. Default: false
min_l7_flavor_id	No	String	Specifies the ID of the minimum Layer-7 flavor for elastic scaling. This parameter cannot be left blank if there are HTTP or HTTPS listeners. Minimum: 1 Maximum: 36

Response Parameters

Status code: 200

Table 4-85 Response body parameters

Parameter	Type	Description
loadbalancer	LoadBalancer object	Specifies the load balancer.
loadbalancer_id	String	Specifies the load balancer ID. This parameter is unsupported. Please do not use it. Minimum: 0 Maximum: 36
order_id	String	Specifies the order No. This parameter is unsupported. Please do not use it. Minimum: 0 Maximum: 36

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated. Minimum: 0 Maximum: 36

Table 4-86 LoadBalancer

Parameter	Type	Description
id	String	Specifies the load balancer ID.
description	String	Provides supplementary information about the load balancer. Minimum: 1 Maximum: 255
provisioning_status	String	Specifies the provisioning status of the load balancer. The value can be one of the following: <ul style="list-style-type: none">• ACTIVE: The load balancer is successfully provisioned.• PENDING_DELETE: The load balancer is being deleted.
admin_state_up	Boolean	Specifies the administrative status of the load balancer. The value can be true or false . true indicates the load balancer is enabled and false indicates the load balancer is disabled.
provider	String	Specifies the provider of the load balancer. The value can only be vlb .
pools	Array of PoolRef objects	Lists the IDs of backend server groups associated with the load balancer.
listeners	Array of ListenerRef objects	Lists the IDs of listeners added to the load balancer.
operating_status	String	Specifies the operating status of the load balancer. The value can only be ONLINE , indicating that the load balancer is running normally.
name	String	Specifies the load balancer name.
project_id	String	Specifies the project ID of the load balancer.

Parameter	Type	Description
<code>vip_subnet_cidr_id</code>	String	Specifies the ID of the IPv4 subnet where the load balancer resides.
<code>vip_address</code>	String	Specifies the private IPv4 address bound to the load balancer.
<code>vip_port_id</code>	String	Specifies the ID of the port bound to the private IPv4 address of the load balancer.
<code>tags</code>	Array of Tag objects	Lists the tags added to the load balancer.
<code>created_at</code>	String	Specifies the time when the load balancer was created, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> .
<code>updated_at</code>	String	Specifies the time when the load balancer was updated, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> .
<code>guaranteed</code>	Boolean	Specifies whether the load balancer is a dedicated load balancer. <ul style="list-style-type: none">• true (default): The load balancer is a dedicated load balancer.• false: The load balancer is a shared load balancer.
<code>vpc_id</code>	String	Specifies the ID of the VPC where the load balancer resides.
<code>eips</code>	Array of EipInfo objects	Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer. This parameter has the same meaning as publicips .
<code>ipv6_vip_address</code>	String	Specifies the IPv6 address bound to the load balancer.
<code>ipv6_vip_subnet_id</code>	String	Specifies the ID of the IPv6 subnet where the load balancer resides.
<code>ipv6_vip_port_id</code>	String	Specifies the ID of the port bound to the IPv6 address of the load balancer.
<code>availability_zone_list</code>	Array of strings	Specifies the list of AZs where the load balancer is created.

Parameter	Type	Description
enterprise_project_id	String	Specifies the enterprise project ID. If this parameter is not passed during resource creation, "0" will be returned, and the resource belongs to the default enterprise project. "0" is not a valid enterprise project ID and cannot be used in the APIs for creating, updating the load balancer, or querying details of the load balancer.
billing_info	String	Provides resource billing information. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 1024
l4_flavor_id	String	Specifies the ID of a flavor at Layer 4. Minimum: 1 Maximum: 255
l4_scale_flavor_id	String	Specifies the ID of the reserved flavor at Layer 4. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255
l7_flavor_id	String	Specifies the ID of a flavor at Layer 7. Minimum: 1 Maximum: 255
l7_scale_flavor_id	String	Specifies the ID of the reserved flavor at Layer 7. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255
publicips	Array of PublicIpInfo objects	Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer. This parameter has the same meaning as eips .
global_eips	Array of GlobalEipInfo objects	Specifies the global EIP bound to the load balancer. Only the first global EIP specified under global_eips will be bound. This parameter is unsupported. Please do not use it.

Parameter	Type	Description
elb_virsubnet_ids	Array of strings	Lists the IDs of subnets on the downstream plane.
elb_virsubnet_type	String	Specifies the type of the subnet on the downstream plane. <ul style="list-style-type: none"> ● ipv4: IPv4 subnet ● dualstack: subnet that supports IPv4/IPv6 dual stack
ip_target_enable	Boolean	Specifies whether to enable the IP as a Backend option. If you enable this function, you can add servers in a peer VPC connected through a VPC peering connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using their IP addresses. The value can be true (enable IP as a Backend) or false (disable IP as a Backend). Note: <ul style="list-style-type: none"> ● The value can only be updated to true.
frozen_scene	String	Specifies the scenario where the load balancer is frozen. Multiple values are separated using commas (.). This parameter is unsupported. Please do not use it.
ipv6_bandwidth	BandwidthRef object	Specifies the ID of the bandwidth used by an IPv6 address. This parameter is available only when you create or update a load balancer with a public IPv6 address. If you use a new IPv6 address and specify a shared bandwidth, the IPv6 address will be added to the shared bandwidth.
deletion_protection_enable	Boolean	Specifies whether deletion protection is enabled. <ul style="list-style-type: none"> ● false: Deletion protection is not enabled. ● true: Deletion protection is enabled. NOTE Disable deletion protection for all your resources before deleting your account. This parameter is returned only when deletion protection is enabled at the site. This parameter is unsupported. Please do not use it.

Parameter	Type	Description
autoscaling	AutoscalingRef object	<p>Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer specifications can be automatically adjusted based on incoming traffic.</p> <p>Note:</p> <ul style="list-style-type: none">This parameter is only available for users on the whitelist.If elastic scaling is enabled, l4_flavor_id indicates the maximum Layer-4 flavor for elastic scaling. l7_flavor_id indicates the maximum Layer-7 flavor for elastic scaling. <p>This parameter is unsupported. Please do not use it.</p>
public_border_group	String	Specifies the AZ group to which the load balancer belongs.
charge_mode	String	<p>Specifies the charge mode when creating a load balancer. The value can be one of the following:</p> <ul style="list-style-type: none">flavor: billed by the specifications you will select.lcu: billed by how many LCUs you have used. Note:<ul style="list-style-type: none">If this parameter is not specified during the creation of a shared load balancer, the load balancer is free.If this parameter is not specified during the creation of a dedicated load balancer, the load balancer is billed by the specifications you have selected.
waf_failure_action	String	<p>Specifies traffic distributing policies when the WAF is faulty.</p> <ul style="list-style-type: none">discard: Traffic will not be distributed.forward: Traffic will be distributed to the default backend servers. <p>Note: This parameter takes effect only when WAF is enabled for the load balancer.</p> <p>This parameter is unsupported. Please do not use it.</p>
log_group_id	String	Specifies the ID of the log group that is associated with the load balancer.
log_topic_id	String	Specifies the ID of the log topic that is associated with the load balancer.

Table 4-87 PoolRef

Parameter	Type	Description
id	String	Specifies the ID of the backend server group.

Table 4-88 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-89 Tag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: 1 Maximum: 36
value	String	Specifies the tag value. Minimum: 0 Maximum: 43

Table 4-90 EipInfo

Parameter	Type	Description
eip_id	String	eip_id
eip_address	String	eip_address
ip_version	Integer	Specifies the IP version. 4 indicates IPv4, and 6 indicates IPv6.

Table 4-91 PublicIpInfo

Parameter	Type	Description
publicip_id	String	Specifies the EIP ID.
publicip_address	String	Specifies the IP address.
ip_version	Integer	Specifies the IP version. The value can be 4 (IPv4) or 6 (IPv6).

Table 4-92 GlobalEipInfo

Parameter	Type	Description
global_eip_id	String	Specifies the ID of the global EIP.
global_eip_address	String	Specifies the global EIP.
ip_version	Integer	Specifies the IP version. The value can be 4 and 6 . 4 indicates an IPv4 address, and 6 indicates an IPv6 address.

Table 4-93 BandwidthRef

Parameter	Type	Description
id	String	Specifies the shared bandwidth ID.

Table 4-94 AutoscalingRef

Parameter	Type	Description
enable	Boolean	Specifies whether to enable elastic scaling for the load balancer. <ul style="list-style-type: none">• true: Enable elastic scaling.• false (default): Disable elastic scaling.
min_l7_flavor_id	String	Specifies the ID of the minimum Layer-7 flavor for elastic scaling. This parameter cannot be left blank if there are HTTP or HTTPS listeners. Minimum: 1 Maximum: 36

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_virusubnet_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"
  }
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.6.5 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 4-95 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
loadbalancer_id	Yes	String	Specifies the load balancer ID.

Request Parameters

Table 4-96 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

None

Example Requests

Deleting a load balancer

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

Example Responses

None

Status Codes

Status Code	Description
204	Successful request.

Error Codes

See [Error Codes](#).

4.6.6 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, **DISABLED** 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 4-97 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
loadbalancer_id	Yes	String	Specifies the load balancer ID.

Request Parameters

Table 4-98 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-99 Response body parameters

Parameter	Type	Description
statuses	LoadBalancerStatusResult object	Provides information about the load balancer status tree.
request_id	String	Specifies the request ID. The value is automatically generated.

Table 4-100 LoadBalancerStatusResult

Parameter	Type	Description
loadbalancer	LoadBalancerStatus object	Specifies the statuses of the load balancer and its associated resources.

Table 4-101 LoadBalancerStatus

Parameter	Type	Description
name	String	Specifies the load balancer name. Minimum: 1 Maximum: 255
provisioning_status	String	Specifies the provisioning status of the load balancer. The value can be ACTIVE or PENDING_DELETE . <ul style="list-style-type: none">• ACTIVE: The load balancer is successfully provisioned.• PENDING_DELETE: The load balancer is being deleted.

Parameter	Type	Description
listeners	Array of LoadBalancerStatusListener objects	Lists the listeners added to the load balancer.
pools	Array of LoadBalancerStatusPool objects	Lists the backend server groups associated with the load balancer.
id	String	Specifies the load balancer ID.
operating_status	String	<p>Specifies the operating status of the load balancer.</p> <p>The value can only be one of the following:</p> <ul style="list-style-type: none"> ● ONLINE (default): The load balancer is running normally. ● FROZEN: The load balancer has been frozen. ● DEGRADED: This status is displayed only when operating_status is set to OFFLINE for a backend server associated with the load balancer and the API for querying the load balancer status tree is called. ● DISABLED: This status is displayed only when admin_state_up of the load balancer is set to false. <p>DEGRADED and DISABLED are returned only when the API for querying the load balancer status tree is called.</p>

Table 4-102 LoadBalancerStatusListener

Parameter	Type	Description
name	String	<p>Specifies the name of the listener added to the load balancer.</p> <p>Minimum: 1</p> <p>Maximum: 255</p>
provisioning_status	String	<p>Specifies the provisioning status of the listener. The value can only be ACTIVE, indicating that the listener is successfully provisioned.</p>
pools	Array of LoadBalancerStatusPool objects	Specifies the operating status of the backend server group associated with the listener.

Parameter	Type	Description
l7policies	Array of LoadBalancerStatusPolicy objects	Specifies the operating status of the forwarding policy added to the listener.
id	String	Specifies the listener ID.
operating_status	String	Specifies the operating status of the listener. The value can only be one of the following: <ul style="list-style-type: none"> ● ONLINE (default): The listener is running normally. ● DEGRADED: This status is displayed only when provisioning_status of a forwarding policy or a forwarding rule added to the listener is set to ERROR or operating_status is set to OFFLINE for a backend server associated with the listener. ● DISABLED: This status is displayed only when admin_state_up of the load balancer or of the listener is set to false. Note: DEGRADED and DISABLED are returned only when the API for querying the load balancer status tree is called.

Table 4-103 LoadBalancerStatusPolicy

Parameter	Type	Description
action	String	Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener. The value can be one of the following: <ul style="list-style-type: none"> ● REDIRECT_TO_POOL: Requests are forwarded to another backend server group. ● REDIRECT_TO_LISTENER: Requests are redirected to an HTTPS listener.
id	String	Specifies the forwarding policy ID.
provisioning_status	String	Specifies the provisioning status of the forwarding policy. <ul style="list-style-type: none"> ● ACTIVE (default): The forwarding policy is provisioned successfully. ● ERROR: Another forwarding policy of the same listener has the same forwarding rule.

Parameter	Type	Description
name	String	Specifies the policy name. Minimum: 1 Maximum: 255
rules	Array of LoadBalancerStatusL7Rule objects	Specifies the forwarding rule.

Table 4-104 LoadBalancerStatusL7Rule

Parameter	Type	Description
id	String	Specifies the ID of the forwarding rule.
type	String	Specifies the type of the match content. The value can be HOST_NAME or PATH . <ul style="list-style-type: none"> • HOST_NAME: A domain name will be used for matching. • PATH: A URL will be used for matching. The value must be unique for each forwarding rule in a forwarding policy.
provisioning_status	String	Specifies the provisioning status of the forwarding rule. <ul style="list-style-type: none"> • ACTIVE (default): The forwarding rule is successfully provisioned. • ERROR: Another forwarding policy of the same listener has the same forwarding rule.

Table 4-105 LoadBalancerStatusPool

Parameter	Type	Description
provisioning_status	String	Specifies the provisioning status of the backend server group. The value can only be ACTIVE , indicating that the backend server group is successfully provisioned.
name	String	Specifies the name of the backend server group. Minimum: 1 Maximum: 255

Parameter	Type	Description
healthmonitor	LoadBalancerStatusHealthMonitor object	Specifies the health check results of backend servers in the load balancer status tree.
members	Array of LoadBalancerStatusMember objects	Specifies the backend server.
id	String	Specifies the ID of the backend server group.
operating_status	String	Specifies the operating status of the backend server group. The value can be one of the following: <ul style="list-style-type: none"> ● ONLINE: The backend server group is running normally. ● DEGRADED: This status is displayed only when operating_status of a backend server in the backend server group is set to OFFLINE. ● DISABLED: This status is displayed only when admin_state_up of the backend server group or of the associated load balancer is set to false. Note: DEGRADED and DISABLED are returned only when the API for querying the load balancer status tree is called.

Table 4-106 LoadBalancerStatusHealthMonitor

Parameter	Type	Description
type	String	Specifies the health check protocol. The value can be TCP , UDP_CONNECT , or HTTP .
id	String	Specifies the health check ID.
name	String	Specifies the health check name. Minimum: 1 Maximum: 255
provisioning_status	String	Specifies the provisioning status of the health check. The value can only be ACTIVE , indicating that the health check is successfully provisioned.

Table 4-107 LoadBalancerStatusMember

Parameter	Type	Description
provisioning_status	String	Specifies the provisioning status of the backend server. The value can only be ACTIVE , indicating that the backend server is successfully provisioned.
address	String	Specifies the private IP address bound to the backend server.
protocol_port	Integer	Specifies the port used by the backend server to receive requests. The port number ranges from 1 to 65535.
id	String	Specifies the backend server ID.
operating_status	String	Specifies the operating status of the backend server. The value can be one of the following: <ul style="list-style-type: none">● ONLINE: The backend server is running normally.● NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs.● DISABLED: The backend server is not available. This status is displayed only when admin_state_up of the backend server, or the backend server group to which it belongs, or the associated load balancer is set to false and the API for querying the load balancer status tree is called.● OFFLINE: The cloud server used as the backend server is stopped or does not exist.

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-xy",  
      "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 Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.7 Certificate

4.7.1 Creating a Certificate

Function

This API is used to create an SSL certificate for HTTPS listeners.

Calling Method

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

URI

POST /v3/{project_id}/elb/certificates

Table 4-108 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-109 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-110 Request body parameters

Parameter	Mandatory	Type	Description
certificate	Yes	CreateCertificateOption object	Specifies the certificate.

Table 4-111 CreateCertificateOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the certificate. This parameter is unsupported. Please do not use it.
certificate	No	String	Specifies the body of the certificate required by HTTPS listeners. The value must be PEM encoded. Maximum 65,536 character length is allowed, supports certificate chains with a maximum of 11 layers (including certificates and certificate chains).
description	No	String	Provides supplementary information about the certificate. Minimum: 0 Maximum: 255

Parameter	Mandatory	Type	Description
domain	No	String	<p>Specifies the domain names used by the server certificate. This parameter will take effect only when type is set to server and the default value is "".</p> <ul style="list-style-type: none"> The value can contain 0 to 1024 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 30 domain names are allowed. 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 A wildcard domain name is a domain name starts with an asterisk (*). Example: *.test.com <p>Minimum: 0 Maximum: 10000</p>
name	No	String	<p>Specifies the certificate name.</p> <p>Minimum: 0 Maximum: 255</p>
private_key	No	String	<p>Specifies the private key of the certificate used by HTTPS listeners. The value can contain up to 8,192 PEM encoded characters.</p> <ul style="list-style-type: none"> This parameter is valid and mandatory only when type is set to server. This parameter will be ignored even if type is set to client. The value must be PEM encoded and will not take effect.

Parameter	Mandatory	Type	Description
project_id	No	String	<ul style="list-style-type: none"> This parameter is valid and mandatory only when type is set to server. Minimum: 1 Maximum: 32
type	No	String	Specifies the certificate type. The value can be server or client . server indicates server certificates, and client indicates CA certificates. The default value is server .
enterprise_project_id	No	String	Specifies the ID of the enterprise project that the certificate belongs to.

Response Parameters

Status code: 201

Table 4-112 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
certificate	CertificateInfo object	Specifies the certificate.

Table 4-113 CertificateInfo

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the certificate. This parameter is unsupported. Please do not use it.
certificate	String	Specifies the certificate content. The value must be PEM encoded.
description	String	Provides supplementary information about the certificate. Minimum: 1 Maximum: 255

Parameter	Type	Description
domain	String	<p>Specifies the domain names used by the server certificate. This parameter will take effect only when type is set to server.</p> <ul style="list-style-type: none">The value can contain 0 to 1024 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 30 domain names are allowed.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.comA wildcard domain name is a domain name starts with an asterisk (*). Example: *.test.com <p>Minimum: 1 Maximum: 10000</p>
id	String	Specifies the certificate ID.
name	String	<p>Specifies the certificate name.</p> <p>Minimum: 1 Maximum: 255</p>
private_key	String	<p>Specifies the private key of the certificate used by HTTPS listeners. The value can contain up to 8,192 PEM encoded characters.</p> <ul style="list-style-type: none">This parameter is valid and mandatory only when type is set to server.This parameter will be ignored even if type is set to client. The value must be PEM encoded and will not take effect.
type	String	<p>Specifies the certificate type. The value can be server or client. server indicates server certificates, and client indicates CA certificates. The default value is server.</p>
created_at	String	Specifies the time when the certificate was created.
updated_at	String	Specifies the time when the certificate was updated.
expire_time	String	Specifies the time when the certificate expires.
project_id	String	Specifies the project ID of the certificate.

Parameter	Type	Description
subject_alternative_names	Array of strings	Specifies all the domain names of the certificate.

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-----
\nMIIIEvglBADANBgkqhkiG9w0BAQEFAASCBAKgwggSkAgEAAoIBAQQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KcNzX1nfzTvl2ksXLTQ2o9BkpStnPe\ntB4s32ZiJRMlk
+61iUUMNsHwK2WBX57T3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lccq39buNplgDOWzEP5AqzXt
\nCOFYn6RTH5SRug4hKNN7sT1eYMSlHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl\nZAPYUBkl/
OXuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwLCRLU08k\nEo04Z9H/
AgMBAAECCggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\nfvCarftGgMaYWPNSCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUsHFgZjv5OQB
\nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8ISETq8YaXngBO6vES9LMhHkNKKR\nciu9YkInNEHu6uRJ5g/
eGGX3KQynTvwIhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M\nEGpFYI6AdHIwFZcT/
RNAXhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7Ale\nkrguPtFv1vWklg
+bUfHgGaiAEYTpAUN9t2DVliijgQKbGQDnYMMsaF0r557CM1CT
\nXUqgCZ08MKeV2jf2drxRRwRl33SksQbzAQ/qrLd7GP3sCGqvkvWY2FPdFyF8kx
\nGcCeZPcleZYCQAM41pjtSaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjP7dt
\nJ7n8EzkRUNE6aIMHOFEEych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\niWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAKzJGlvS7yQiYWU+wthAr9urbWYdGZ
\nIS6VjoTkF6r7VZoILXX0fBuXh6lm8K8IQRFbPjff56p9phMwaBpDNDrfpHB5utBU\nx40yldp6wKBgQC69Cp/
xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jr4eB\n1IVQhELGI9CbKSdzKM71GyElmix/
T7fnSHIWho1qVo6AQyduNwNAQD15pr8KAd\nXGXAZZ1FQcb3KYa
+2fflERmazdOTWjYz0tGqZnXkEeMdSLkmqICRigWgQKBgDak\n/735uP20KKqhNehZpC2dJei7OIlgRhCs/
dkASUXHSW4fptBnUxACYocdDxtY4Vha\nfi7FPMdvGl8ioYbvlHFh
+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54Pwd4Ctfk9o
\njHjWB7pQlUyPZTO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDjKxfciXKcsYr9Iluk
\nfaoXgJKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd\n3fy
+1rCUwzOp9L5jtYf4ege\n-----END PRIVATE KEY-----",
    "certificate": "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgICERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTMXID
\nb21wYW55IENBM4XDTE4MDcwMjEzMDU0N1oXDTQ1MTEExNzEzMDU0N1owFDESMBAG
\nA1UEAwJbG9yYXxob3N0MIIBIjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAn0FQGzi3ucTX
+DNud1p/
b4XVM6i3rY7+Cfge5GMLDIUHXCFcGp19Z3807yNpLF5\nU0NqPQZKUrZz3rQeLN9mYiUTJZPutYIFDDbB8CtI
gV+eyU9yYJslWx/Bm5kWNPh9\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/
W7jaS\niAzlsD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/K
\ny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPILZUUn7yw3nkOOtLMI28IEv0Wy
\nYd7CMJQs1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t\nnhwQKuUvJhwR/
AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBCwUA
\nA4IBAQA8lMQJaTey7EjXtRLSVIEAMftAQPG6jjjNQuvIBQYUDauDT4W2XUZ5wAn
\njOyQ83va672K1G9s8n6xlH+xwwdSNnozaKzC87vwSeZKI0dI9I5I98TGKI6OoDa
\nnezmzCwQYtHBMVQ4c7MI8554Ft1mWSt4dMAK2rzNYjvPRlylp1HMnl6hkjPk4PCZ
\nnwKha0dlScati9Cct3UzXSNJOSLalKdHERH08lqd+1BchScxCfk0xNITn1HZZGml\n
+vbmunok3A2luc14rnsrbcgYqXGikySN6B2cRLBDK4Y3wChiW6NVytVqcx5/mZ\niYsGDVN+9QBd0eYUHce
+77s96i3l\n-----END CERTIFICATE-----"
  }
}
```

Example Responses

Status code: 201

Normal response to POST requests.

```
{
  "certificate" : {
    "private_key" : "-----BEGIN PRIVATE KEY-----
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J
+B7kYwsMhRcgdcj8KCnX1nfzTvl2ksXITQ2o9BkpStnPetB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rMMD30gLv6QoP3cq7PGWcuZKV7hjd1tjCT
QukwMvqV8lcq39buNplgDOWzEP5AzaqXtCOFYn6RTH5SRug4hKNN7sT1eYMslHu7wtEBDKVgrLjOCe/
W2f8rLT1zEsoAW2ChZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjwbwS/RbJh3slwLCRLU08kEo04Z9H/
AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/
HlFvCARftGgMaYWPNSNCJRMXB7tPwpQu19esjz4Z/
cR2Je4fTLPrffGUsHfGzjv5OQBZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNK
Krciu9YklnNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9MEGpfYl6AdHlWfZcT/
RNAXhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7AlekrguPtFv1vWklg
+bUfHgGaiAEYTpAUN9t2DVIijgQKBgQDnYMMsaF0r557CM1CTXUqgCZo8MKeV2jfdrlxRRwRL33SksQbzAQ/
qrLdT7GP3sCGqvkxWY2FPdFyF8kxGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPsPh7JNF3Tm/JH/
fbwjP7dtJ7n8EzkRUNE6aIMHOFeych/
PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLriWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7y
QiYWU
+wthAr9urbWYdGZIS6VjoTkF6r7VZoLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrpHB5utBUxs40yldp6w
KBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB1lVQhELGI9CbKsDzKM71GyElmix/
T7FnSHIWlho1qVo6AQyduNWNwAQD15pr8KAdXGXAZZ1FQcb3KYa
+2fflERmazdOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak/735uP20KKqhNehZpC2dJei7OilRhCS/
dKASUXHSW4fptBnUxACYocdDxtY4Vhaf17FPMdvG18ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa
+2cFm1Agf7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqLLAOGBAJkD4wHW54PwD4Ctfk9ojHjWB7pQUiYpT
ZO9dm
+4fpCMn9Okf43AE2yAOaAP94GdzdDjKxfciXKcsYr9lIukfaoXgjKR7p1zERiWzUff63SB4aiyX1H7IX0MwHDZQO3
8a5gZaOm/BUIGKMWXzuEd3fy+1rCUwzOp9LSjtYf4ege-----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-----
MIIC4TCCAcmgAwIBAgICERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMmTXlDb21wYW55IENBMB4X
DTE4MDcwMjEzZjU0N1oXDTQ1MTEzZjU0N1owFDESMBAGA1UEAwwJbG9yYXRob3N0MIIIBjANBgkqh
kiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAFQgzi3ucTX+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5U0NqPQZKURz3rQeLN9mYiUTJZPutYFDDB8CtlgV
+eyU9yYJslWx/Bm5kWNPh97B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/
W7jaSIAzlsxD+QM6l7QjhWj+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/
Ky09cxLKAFTgoZWQD2FAZJf9F7k1kYNwqlTz3CPLZUUn7yw3nkOOTLMI28IEv0WYyD7CMJQks1NPJBKNOGfR/
wlDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29thwQKuUvJhwR/
AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsG5Ib3DQEBcWUAA4IBAQA8IMQJxaTey7EjXtRSLVl
EAMftAQPG6jjNQuvIBQYUdauDT4W2XUZ5wAnjiOyQ83va672K1G9s8n6xIH
+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDaetzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rZNYjvPR
LYzlp1HMnl6hkjPk4PCZwKnha0dlScati9Cct3UzXSNJOSLalKdHerH08lqd+1BchScxCfk0xNIITn1HZZGml
+vbmunok3A2luc14rnsrbcgYqXGikySN6B2cRLBDK4Y3wChiW6NVytVqcx5/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" ]
  },
  "request_id" : "98414965-856c-4be3-8a33-3e08432a222e"
}
```

Status Codes

Status Code	Description
201	Normal response to POST requests.

Error Codes

See [Error Codes](#).

4.7.2 Querying Certificates

Function

This API is used to query all SSL certificates.

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 4-114 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-115 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the last record on the previous page. Note: <ul style="list-style-type: none">• This parameter must be used together with limit.• If this parameter is not specified, the first page will be queried.• This parameter cannot be left blank or set to an invalid ID.
limit	No	Integer	Specifies the number of records on each page. Minimum: 0 Maximum: 2000 Default: 2000
page_reverse	No	Boolean	Specifies whether to use reverse query. Values: <ul style="list-style-type: none">• true: Query the previous page.• false (default): Query the next page. Note: <ul style="list-style-type: none">• This parameter must be used together with limit.• If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker.
id	No	Array	Specifies a certificate ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> .
name	No	Array	Specifies the certificate name. Multiple names can be queried in the format of <i>name=xxx&name=xxx</i> .

Parameter	Mandatory	Type	Description
description	No	Array	Provides supplementary information about the certificate. Multiple descriptions can be queried in the format of <i>description=xxx&description=xx</i> .
admin_state_up	No	Boolean	Specifies the administrative status of the certificate. This parameter is unsupported. Please do not use it.
domain	No	Array	Specifies the domain names used by the server certificate. This parameter is available only when type is set to server . Multiple domain names can be queried in the format of <i>domain=xxx&domain=xxx</i> .
type	No	Array	Specifies the certificate type. The value can be server or client . server indicates server certificates, and client indicates CA certificates. Multiple types can be queried in the format of <i>type=xxx&type=xxx</i> .
common_name	No	Array	Specifies the primary domain name of the certificate. Multiple values can be queried in the format of <i>common_name=xxx&common_name=xxx</i> .
fingerprint	No	Array	Specifies the fingerprint of the certificate. Multiple values can be queried in the format of <i>fingerprint=xxx&fingerprint=xxx</i> .

Request Parameters

Table 4-116 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-117 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
page_info	PageInfo object	Shows pagination information about certificates.
certificates	Array of CertificateInfo objects	Lists the certificates.

Table 4-118 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

Table 4-119 CertificateInfo

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the certificate. This parameter is unsupported. Please do not use it.

Parameter	Type	Description
certificate	String	Specifies the certificate content. The value must be PEM encoded.
description	String	Provides supplementary information about the certificate. Minimum: 1 Maximum: 255
domain	String	Specifies the domain names used by the server certificate. This parameter will take effect only when type is set to server . <ul style="list-style-type: none">• The value can contain 0 to 1024 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 30 domain names are allowed.• 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• A wildcard domain name is a domain name starts with an asterisk (*). Example: *.test.com Minimum: 1 Maximum: 10000
id	String	Specifies the certificate ID.
name	String	Specifies the certificate name. Minimum: 1 Maximum: 255
private_key	String	Specifies the private key of the certificate used by HTTPS listeners. The value can contain up to 8,192 PEM encoded characters. <ul style="list-style-type: none">• This parameter is valid and mandatory only when type is set to server.• This parameter will be ignored even if type is set to client. The value must be PEM encoded and will not take effect.
type	String	Specifies the certificate type. The value can be server or client . server indicates server certificates, and client indicates CA certificates. The default value is server .

Parameter	Type	Description
created_at	String	Specifies the time when the certificate was created.
updated_at	String	Specifies the time when the certificate was updated.
expire_time	String	Specifies the time when the certificate expires.
project_id	String	Specifies the project ID of the certificate.
subject_alternative_names	Array of strings	Specifies all the domain names of the certificate.

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_certificatekkkk",
    "type": "server",
    "domain": null,
    "description": "description for certificatehhhh",
    "private_key": "-----BEGIN PRIVATE KEY-----
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J
+B7kYwsMhRcgdcJ8KcN1nfzTvl2ksXITQ2o9BkpStnPetB4s32ZIJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rMMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCT
QukwMvqV8lcq39buNplgDOWzEP5AqzXtCOFYn6RTH5SRug4hKNN7sT1eYMSlHu7wtEBDKVgrLjOCe/
W2f8rLT1zEsoAW2ChlZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjwbwgS/RbJh3slwCRLU08kEo04Z9H/
AgMBAAEcggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/
HlfvCARftGgMaYWPSNcJRMXB7tPwpQu19esjz4Z/
cR2Je4fTLPrffGUsHFgZjv5OQBZVe4a5Hj1OcgJYhwCqPs2d9i2wToYnBbcfgh8lSETq8YaXngBO6vES9LMhHkNK
Rrciu9YkInNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9MEGpFYI6AdHlWfZcT/
RNAXhP82lg2gUJSgAu66FfdjMwQXKbafKdP3zq4Up8a7AlekrquPtfV1vWklg
+bUFhgGaiAEYTPAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CTXUqgCZo8MKeV2jf2drLxRRwRl33SksQbzAQ/
qrLdT7GP3sCGqvKxWY2FPdFYf8kxGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/
fbwjP7dtU7n8EzkRUNE6aIMHOFeych/
PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLriWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7y
QiYWU
+wthAr9urbWYdGZIS6VjoTkF6r7VZoILXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBUxs40Yldp6w
KBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB1lVQhELG9CbKSDzKM71GyElmix/
T7FnJSHWlho1qVo6AQyduNWNQAQD15pr8KAdXGXAZZ1FQcb3KYa
+2fflERmazedOTwJYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak/735uP20KKqhNehZpC2dJei7OilgRhCS/
dKASUXHSW4fptBnUxACYocdDxtY4Vhaf17FPMdvgL8ioYbvlHFh+XOXs9r1S8yeWnHoXMB6eXWmYKMrAoveLa
+2cFm1Agf7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9ojHjWB7pQUiYpT
ZO9dm
+4fpCMn9Okf43AE2yAoAaP94GdzdJkxfciXKcsYr9IluKfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO3
8a5gZaOm/BUIGKMWXzuEd3fy+1rCUwzOp9LSjtYf4ege-----END PRIVATE KEY-----",
    "certificate": "-----BEGIN CERTIFICATE-----
MIIC4TCCAcmgAwIBAgICERewDQYJKoZIhvcNAQELBQAwFzEVMBMGGA1UEAxMNTXlDb21wYW55IENBMmB4X
```

```
DTE4MDcwMjEzMjU0N1oXDTQ1MTEExNzEzMjU0N1owFDESMBAGA1UEAwwJbG9jYWxob3N0MIIIBjANBkgqh
kiG9w0BAQEFAAOCAQ8AMIIBBgKCAQEA0FQGzi3ucTX+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUIHXCFcGp19Z3807yNpLF5U0NqPQZKUUrZz3rQeLN9mYiUTJZPutYIFDDbB8CtIgv
+eyU9yYJslWx/Bm5kWNPh97B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/
W7jaSIaZsxD+QM6L7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/
Ky09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPILZUUn7yw3nkOOtLMI28IEv0Wyyd7CMJQkS1NPJBKNOGfR/
wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29thwQKuUvJhwR/
AAABMBMGA1UdJQQMMAoGCCSGAQUFBwMBMA0GCSqGSIb3DQEBCwUAA4IBAQA8IMQJxaTey7EjXtRLSVL
EAMftAQPG6jjjNQuvIBQYUDauDT4W2XUZ5wAnjiOyQ83va672K1G9s8n6xlH
+xxwfdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDaemzCwQYtHBMVQ4c7ML8554Ft1mWSt4dMAK2rzNYjvPR
LYlzp1HMnl6hkjPk4PCZwKnha0dlScati9CCt3UzXSNJOSLaIKdHErH08lqd+1BchScxCfk0xNITn1HZZGml
+vbmunok3A2luc14rnsrbcGyqGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZiYsGDVN+9QBd0eYUHce
+77s96i3l-----END CERTIFICATE-----",
  "admin_state_up" : true,
  "created_at" : "2019-04-21T18:59:43Z",
  "updated_at" : "2019-04-21T18:59:43Z",
  "expire_time" : "2045-11-17T13:25:47Z",
  "common_name" : "www.example.com",
  "fingerprint" : "869df7fcb441c2ef3fb9329437815972eeb1ef0e",
  "subject_alternative_names" : [ "www.example.com" ]
}, {
  "id" : "7875ccb4c6b44cdb90ab2ab89892ab71",
  "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
  "name" : "https_certificatekkkk",
  "type" : "client",
  "domain" : "sda.com",
  "description" : "description for certificatehhhh",
  "private_key" : "-----BEGIN PRIVATE KEY-----
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J
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W2f8rLT1zEsoAW2ChLZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjwbwS/RbJh3slwCRLU08kEo04Z9H/
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cR2Je4fTLPrffGUsHFgZjv5OQBZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNK
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RNAxhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7AlekrquPtfV1vWklg
+buFhGgaiEYTpAUN9t2DVliijgQKbGQDnYMMsaF0r557CM1CTXUqgCzo8MKKeV2Jf2drLxRRwRL33KSqbzAQ/
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PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLriWgTWHXPzXUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7y
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dKASUXHSW4fptBnUxACYocDxtY4Vhaf17FPMdvG8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa
+2cFm1Agf7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqLLaOGBAJkD4wHW54PwD4CtFk9ojHjWB7pQUYpT
ZO9dm
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8a5gZaOm/BUIGKMWXzuEd3fy+1rCUwzOp9LSjtYf4ege-----END PRIVATE KEY-----",
  "certificate" : "-----BEGIN CERTIFICATE-----
MIIC4TCCAcmgAwIBAgICEREwDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMNTXlDb21wYW55IENBMB4X
DTE4MDcwMjEzMjU0N1oXDTQ1MTEExNzEzMjU0N1owFDESMBAGA1UEAwwJbG9jYWxob3N0MIIIBjANBkgqh
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b4XVM6l3rY7+Cfge5GMLDIUIHXCFcGp19Z3807yNpLF5U0NqPQZKUUrZz3rQeLN9mYiUTJZPutYIFDDbB8CtIgv
+eyU9yYJslWx/Bm5kWNPh97B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/
W7jaSIaZsxD+QM6L7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/
Ky09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPILZUUn7yw3nkOOtLMI28IEv0Wyyd7CMJQkS1NPJBKNOGfR/
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AAABMBMGA1UdJQQMMAoGCCSGAQUFBwMBMA0GCSqGSIb3DQEBCwUAA4IBAQA8IMQJxaTey7EjXtRLSVL
EAMftAQPG6jjjNQuvIBQYUDauDT4W2XUZ5wAnjiOyQ83va672K1G9s8n6xlH
+xxwfdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDaemzCwQYtHBMVQ4c7ML8554Ft1mWSt4dMAK2rzNYjvPR
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+vbmunok3A2luc14rnsrbcGyqGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZiYsGDVN+9QBd0eYUHce
+77s96i3l-----END CERTIFICATE-----",
  "admin_state_up" : true,
  "created_at" : "2018-10-29T20:16:17Z",
```

```
"updated_at" : "2019-04-06T21:33:24Z",
"expire_time" : "2045-11-17T13:25:47Z",
"common_name" : "www.example.com",
"fingerprint" : "869df7fcb441c2ef3fb9329437815972eeb1ef0e",
"subject_alternative_names" : [ "www.example.com" ]
}, {
  "id" : "7f41c96223d34ebaa3c8e836b6625ec0",
  "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
  "name" : "asdf",
  "type" : "server",
  "domain" : "sda.com",
  "description" : "",
  "private_key" : "-----BEGIN PRIVATE KEY-----
MIIEVgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J
+B7kYwsMhRcgdcJ8KCnX1nfzTvl2ksXITQ2o9BkpStnPetB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rMMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCT
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AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD605XY2fUieh8/
HlfvCARftGgMaYWPNSNCJRMXB7tPwpQu19esjz4Z/
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+bUfHngGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CTXUqgCZo8MKeV2jfdrlxRRwRL33SksQbzAQ/
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QiYWU
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+2ffERmazdOTWjYZ0tGqZnXkEeMd5LkmlqCRigWhGQKBgDak/735uP20KKqhNehZpC2dJei7OilgRhCS/
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+2cFm1Agf7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqLLaOGBAJkD4wHW54Pwd4Ctcfk9ojHjWB7pQUYpT
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8a5gZaOm/BUIGKMWXzuEd3fy+1rCUwzOp9LSjtYf4ege-----END PRIVATE KEY-----",
  "certificate" : "-----BEGIN CERTIFICATE-----
MIIC4TCCACmgAwIBAgIcEREwDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMmMTXIDb21wYW55IENBMB4X
DTE4MDcwMjEzMTU0N1oXDTE4MDcwMjEzMTU0N1owFDESMBAGA1UEAwwJbG9jYWxob3N0M0M0IIBIjANBgkq
kiG9w0BAQEFAAOCAQ8AMIIBCGKCAQEA0FQgzi3ucTX+DNud1p/
b4XVM613rY7+Cfge5GMLDIUxIHXCfCgp19Z3807yNpLF5U0NqPQZKUrZz3rQeLN9mYiUTJZPutYlFDDbB8CtIlgV
+eyU9yYslWx/Bm5kWNPh97B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/
W7jaSlAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/
Ky09cxLKAftgoZWQD2FAZJf97k1kYNwqITz3CPILLZUUn7yW3nkOotLMI28IEv0WYyD7CMJQks1NPJBKNOGfR/
wiDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29thwQKuUvJhwr/
AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBCwUAA4IBAQA8IMQJxaTey7EjXtRSLSVL
EAMftAQPG6jijNquvIBQYUDauDT4W2XUZ5wAnjiOyQ83va672K1G9s8n6xIH
+xxwdSNnozaKzC87vwSeZKIOdl9I5I98TGKl6OoDaemzCwQYtHBMVQ4c7Ml8554Ft1mWst4dMAK2rzNYjvPR
LYlzp1HMni6hkjPk4PCZwKnha0dlScati9CCt3UzXSNJOSLalKdHErH08lqd+1BchScxCfk0xNITn1HZZGml
+vbmunok3A2luc14rnsrbcKGYqGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/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" ]
}],
"page_info" : {
  "previous_marker" : "5494a835d88f40ff940554992f2f04d4",
  "current_count" : 3
},
"request_id" : "a27e7ae6-d901-4ec2-8e66-b8a1413819ad"
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.7.3 Viewing Details of a Certificate

Function

This API is used to view details of an SSL certificate.

Calling Method

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

URI

GET /v3/{project_id}/elb/certificates/{certificate_id}

Table 4-120 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
certificate_id	Yes	String	Specifies a certificate ID.

Request Parameters

Table 4-121 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-122 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
certificate	CertificateInfo object	Specifies the certificate.

Table 4-123 CertificateInfo

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the certificate. This parameter is unsupported. Please do not use it.
certificate	String	Specifies the certificate content. The value must be PEM encoded.
description	String	Provides supplementary information about the certificate. Minimum: 1 Maximum: 255
domain	String	Specifies the domain names used by the server certificate. This parameter will take effect only when type is set to server . <ul style="list-style-type: none"> The value can contain 0 to 1024 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 30 domain names are allowed. 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 A wildcard domain name is a domain name starts with an asterisk (*). Example: *.test.com Minimum: 1 Maximum: 10000
id	String	Specifies the certificate ID.

Parameter	Type	Description
name	String	Specifies the certificate name. Minimum: 1 Maximum: 255
private_key	String	Specifies the private key of the certificate used by HTTPS listeners. The value can contain up to 8,192 PEM encoded characters. <ul style="list-style-type: none">This parameter is valid and mandatory only when type is set to server.This parameter will be ignored even if type is set to client. The value must be PEM encoded and will not take effect.
type	String	Specifies the certificate type. The value can be server or client . server indicates server certificates, and client indicates CA certificates. The default value is server .
created_at	String	Specifies the time when the certificate was created.
updated_at	String	Specifies the time when the certificate was updated.
expire_time	String	Specifies the time when the certificate expires.
project_id	String	Specifies the project ID of the certificate.
subject_alternative_names	Array of strings	Specifies all the domain names of the certificate.

Example Requests

Viewing 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 certificatehhh",
    "private_key": "-----BEGIN PRIVATE KEY-----
MIIIEvgIBADANBgkqhkiG9w0BAQEFAASCBAgEAAoIBAQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J
```

```
+B7kYwsMhRcgdcj8KcN1nfzTvl2ksXITQ2o9BkpStnPetB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH172luna7rMMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCT
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W2f8rLT1zEsoAW2ChlZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjwbwS/RbJh3slwLCRLU08kEo04Z9H/
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HlfvCARftGgMaYWPSNcJRMXB7tPwpQu19esjz4Z/
cR2Je4FTLPrffGUsHFgZjv5OOBZVe4a5Hj1OcgJYhwCqPs2d9i2wToYnBbcfgh8ISETq8YaXngBO6vES9LMhHkNK
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fbwjP7dtU7n8EzkRUNE6aIMHOFeych/
PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLriWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7y
QiYWU
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ZO9dm
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8a5gZaOm/BUIGKMWXzuEd3fy+1rCUwzOp9LSjtYf4ege-----END PRIVATE KEY-----",
  "certificate" : "-----BEGIN CERTIFICATE-----
MIIC4TCCAcmgAwIBAgICEREwDQYJKoZIhvcNAQELBQAQFzEVMBMGA1UEAxMNTXlDb21wYW55IENBMB4X
DTE4MDcwMjEzMTU0N1oXDTQ1MTExNzEzMTU0N1owFEDESBAGA1UEAwwJbG9jYXVwX3N0M0MlIBJANBgkqh
kiG9wOBAQEFAAOCAQ8AMIIBCgKCAQEA0FQZi3ucTX+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUIHXCFcgp19Z3807yNpLF5U0NqPQZKUrZz3rQeLN9mYiUTJZPutYFDDB8CtIgv
+eyU9yYJslWx/Bm5kWNPh97B9Yu9pbbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwK0LpMDL6fCHKt/
W7jaSIAzlsx+QM6l7QjhWj+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylYKy4zgnv1tn/
Ky09cxLKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7yw3nkOotLMI28IEv0WyYd7CMJQks1NPJBKNOGfR/
wlDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29thwQKuUvJhwr/
AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGqSIB3DQEBcWUAA4IBAQA8IMQJxaTey7EjXtRSLVl
EAMftAQPG6jjjNquvIBQYUDauDT4W2XUZ5wAnjiOyQ83va672K1G9s8n6xIH
+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDaetzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPR
LYlzp1HMnl6hkjPk4PCZwKnha0dlScati9CCt3UzXSNJOSLalKdHErH08lqD+1BchScxCfk0xNITn1HZZGml
+vbmunok3A2lucl14rnsrbcGqYqGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZIYSGDVN+9QBd0eYUHce
+77s96i3l-----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" ]
},
  "request_id" : "a94af450-5ac0-4185-946c-27a59a16c1d3"
}
```

Status Codes

Status Code	Description
200	Successful request.
400	Invalid request parameter.
403	Failed to verify the token.
404	The queried resource does not exist.
431	The request headers are too large.
494	The request header or cookie is too large.

Status Code	Description
500	System error.

Error Codes

See [Error Codes](#).

4.7.4 Updating a Certificate

Function

This API is used to update an SSL certificate.

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 4-124 Path Parameters

Parameter	Mandatory	Type	Description
certificate_id	Yes	String	Specifies a certificate ID.
project_id	Yes	String	Specifies the project ID of the certificate.

Request Parameters

Table 4-125 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-126 Request body parameters

Parameter	Mandatory	Type	Description
certificate	Yes	UpdateCertificateOption object	Specifies the certificate.

Table 4-127 UpdateCertificateOption

Parameter	Mandatory	Type	Description
certificate	No	String	Specifies the private key of the certificate. The value must be PEM encoded. Maximum 65,536 character length is allowed, supports certificate chains with a maximum of 11 layers (including certificates and certificate chains).
description	No	String	Provides supplementary information about the certificate. Minimum: 0 Maximum: 255
name	No	String	Specifies the certificate name. Minimum: 0 Maximum: 255
private_key	No	String	Specifies the private key of the server certificate. The value must be PEM encoded. Maximum 8,192 character length is allowed. <ul style="list-style-type: none"> This parameter is valid and mandatory only when type is set to server. This parameter will not take effect and an error will be returned if type is set to client.

Parameter	Mandatory	Type	Description
domain	No	String	<p>Specifies the domain names used by the server certificate. This parameter will take effect only when type is set to server.</p> <ul style="list-style-type: none"> • The value can contain 0 to 1024 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 30 domain names are allowed. • 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 • A wildcard domain name is a domain name starts with an asterisk (*). Example: *.test.com <p>Minimum: 0 Maximum: 10000</p>

Response Parameters

Status code: 200

Table 4-128 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
certificate	CertificateInfo object	Specifies the certificate.

Table 4-129 CertificateInfo

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the certificate. This parameter is unsupported. Please do not use it.
certificate	String	Specifies the certificate content. The value must be PEM encoded.
description	String	Provides supplementary information about the certificate. Minimum: 1 Maximum: 255
domain	String	Specifies the domain names used by the server certificate. This parameter will take effect only when type is set to server . <ul style="list-style-type: none">The value can contain 0 to 1024 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 30 domain names are allowed.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.comA wildcard domain name is a domain name starts with an asterisk (*). Example: *.test.com Minimum: 1 Maximum: 10000
id	String	Specifies the certificate ID.
name	String	Specifies the certificate name. Minimum: 1 Maximum: 255
private_key	String	Specifies the private key of the certificate used by HTTPS listeners. The value can contain up to 8,192 PEM encoded characters. <ul style="list-style-type: none">This parameter is valid and mandatory only when type is set to server.This parameter will be ignored even if type is set to client. The value must be PEM encoded and will not take effect.

Parameter	Type	Description
type	String	Specifies the certificate type. The value can be server or client . server indicates server certificates, and client indicates CA certificates. The default value is server .
created_at	String	Specifies the time when the certificate was created.
updated_at	String	Specifies the time when the certificate was updated.
expire_time	String	Specifies the time when the certificate expires.
project_id	String	Specifies the project ID of the certificate.
subject_alternative_names	Array of strings	Specifies all the domain names of the certificate.

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-----
MIIIEvgIBADANBgkqhkiG9w0BAQEFAASCBCgwgaggSkAgEAAoIBAQQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J
+B7kYwsMhRcgdcJ8KCnX1nfzTvl2ksXLTQ2o9BkpStnPetB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rMMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCT
QukwMvqV8lcq39buNplgDOWzEP5AqzXtCOFYn6RTH5SRug4hKNN7sT1eYMslHu7wtEBDKVgrLjOce/
W2f8rLT1zEsoAW2ChlZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwICRLU08kEo04Z9H/
AgMBAAECCggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/
HlfvCArftGgMaYWPSNCRJMXB7tPwpQu19esjz4Z/
cR2Je4fTLPrffGUsHFgZjv5OQBZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8ISETq8YaXngBO6vES9LMhHkNK
Krciu9YkInNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9c9MEGpFYI6AdHlWfZcT/
RNAXhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7AlekrupTfV1vWklg
+bUFhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CTXUqgCZo8MKeV2jf2drLxRRwRI33SksQbzAQ/
qrLdT7GP3sCGqvKxWY2FPdFYf8kxGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/
fbwjP7dtj7n8EzkRUNE6aIMHOFeych/
PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLriWgTWHXPzXUqaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7y
QiYwU
+wthArurbWYdGZLS6VjoTkF6r7VZoLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBUxs40yldp6w
KBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB1LVQhELG9CbKsdzKM71GyElmix/
T7FnJSHIWtho1qVo6AQyduNwnAQD15pr8KAdXGXAZZ1FQcb3KYa
```

```
+2ffLERmazdOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak/735uP20KKqhNehZpC2dJei7OilgRhCS/  
dKASUXHSW4fptBnUxACYocdDxtY4Vhaf17FPMdvGl8ioYbvlHFh+XOXs9r1S8yeWnHoXMB6eXWmYKMrAoveLa  
+2cFm1Agf7nLhA4R4lqm9IpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9ojHjWB7pQIUYPt  
ZO9dm  
+4fpCMn9Okf43AE2yAOaAP94GdzdDjKxfciXKcsYr9IluKfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO3  
8a5gZaOm/BUIGKMWXzuEd3fy+1rCuwzOp9LSjtUYf4ege-----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-----  
MIIC4TCCAcmgAwIBAgICEREWdQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMNTXIDb21wYW55IENBMB4X  
DTE4MDcwMjEzMjU0N1oXDTQ1MTEyNzEzMjU0N1owFDESMBAGA1UEAwwbG9jYWxob3N0M0M0IIBjANBgkqh  
kiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA0FQGzi3ucTX+DNud1p/  
b4XVM6I3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5U0NqPQZKUrZz3rQeLn9mYiUTJZPutYIFDDbB8CtIgv  
+eyU9yYJslWx/Bm5kWNPh97B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/  
W7jaSIazlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/  
Ky09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPILZUUn7yw3nkOOLMI28IEv0WyyYd7CMJQkS1NPJBKNOGfR/  
wiDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29thwQKuUvJhwr/  
AAABMBMGA1UdJQQMMAoGCCSGAQUFBwMBMA0GCsGSIb3DQEBCwUAA4IBAQA8IMQJxaTey7EjXtRSLVl  
EAMftAQPG6jijNquvIBQYUDauDT4W2XUZ5wAnjiOyQ83va672K1G9s8n6xIH  
+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKl6OoDaemzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPR  
LYlpz1HMni6hkjPk4PCZwKnha0dlScati9CCt3UzXSNJOSLalKdHERH08lqd+1BchScxCfk0xNITn1HZZGml  
+vbmunok3A2luc14rnsrbcgYqXGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZiYsGDVN+9QBd0eYUHce  
+77s96i3I-----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" ]  
},  
  "request_id": "d9abea6b-98ee-4ad4-8c5d-185ded48742f"  
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.7.5 Deleting a Certificate

Function

This API is used to delete an SSL certificate.

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 4-130 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
certificate_id	Yes	String	Specifies a certificate ID.

Request Parameters

Table 4-131 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

None

Example Requests

Deleting an SSL certificate

```
DELETE https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/certificates/  
233a325e5e3e4ce8beeb320aa714cc12
```

Example Responses

None

Status Codes

Status Code	Description
204	Successful request.

Error Codes

See [Error Codes](#).

4.8 Security Policy

4.8.1 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 listener to your load balancer.

Calling Method

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

URI

POST /v3/{project_id}/elb/security-policies

Table 4-132 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-133 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-134 Request body parameters

Parameter	Mandatory	Type	Description
security_policy	Yes	CreateSecurityPolicyOption object	Specifies the custom security policy.

Table 4-135 CreateSecurityPolicyOption

Parameter	Mandatory	Type	Description
name	No	String	Specifies the name of the custom security policy. The default value is "". Minimum: 0 Maximum: 255
description	No	String	Provides supplementary information about the custom security policy. The default value is "". Minimum: 0 Maximum: 255
enterprise_project_id	No	String	Specifies the enterprise project ID.
protocols	Yes	Array of strings	Lists the TLS protocols supported by the custom security policy. Value options: TLSv1 , TLSv1.1 , TLSv1.2 , and TLSv1.3 . Array Length: 1 - 5

Parameter	Mandatory	Type	Description
ciphers	Yes	Array of strings	<p>Lists the cipher suites supported by the custom security policy. The following cipher suites are supported: 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>Note:</p> <ul style="list-style-type: none"> • The protocol and cipher suite must match. At least one cipher suite must match the protocol. • You can match the protocol and cipher suite based on system security policy. <p>Array Length: 1 - 30</p>

Response Parameters

Status code: 201

Table 4-136 Response body parameters

Parameter	Type	Description
security_policy	SecurityPolicy object	Lists the security policies.
request_id	String	Specifies the request ID. The value is automatically generated.

Table 4-137 SecurityPolicy

Parameter	Type	Description
id	String	Specifies the ID of the custom security policy.
project_id	String	Specifies the project ID of the custom security policy.
name	String	Specifies the name of the custom security policy.
description	String	Provides supplementary information about the custom security policy.
listeners	Array of ListenerRef objects	Specifies the listeners that use the custom security policies.
protocols	Array of strings	Lists the TLS protocols supported by the custom security policy.
ciphers	Array of strings	Lists the cipher suites supported by the custom security policy.
created_at	String	Specifies the time when the custom security policy was created.
updated_at	String	Specifies the time when the custom security policy was updated.

Table 4-138 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

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

Normal response to POST requests.

```
{
  "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"
  }
}
```

Status Codes

Status Code	Description
201	Normal response to POST requests.

Error Codes

See [Error Codes](#).

4.8.2 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 4-139 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-140 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the last record on the previous page. Note: <ul style="list-style-type: none">This parameter must be used together with limit.If this parameter is not specified, the first page will be queried.This parameter cannot be left blank or set to an invalid ID.
limit	No	Integer	Specifies the number of records on each page. Minimum: 0 Maximum: 2000 Default: 2000

Parameter	Mandatory	Type	Description
page_reverse	No	Boolean	<p>Specifies whether to use reverse query. Values:</p> <ul style="list-style-type: none"> • true: Query the previous page. • false (default): Query the next page. <p>Note:</p> <ul style="list-style-type: none"> • This parameter must be used together with limit. • If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker.
id	No	Array	<p>Specifies the ID of the custom security policy.</p> <p>Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i>.</p>
name	No	Array	<p>Specifies the name of the custom security policy.</p> <p>Multiple names can be queried in the format of <i>name=xxx&name=xxx</i>.</p>
description	No	Array	<p>Provides supplementary information about the custom security policy.</p> <p>Multiple descriptions can be queried in the format of <i>description=xxx&description=xxx</i>.</p>
protocols	No	Array	<p>Specifies the TLS protocols supported by the custom security policy. (Multiple protocols are separated using spaces.)</p> <p>Multiple protocols can be queried in the format of <i>protocols=xxx&protocols=xxx</i>.</p>

Parameter	Mandatory	Type	Description
ciphers	No	Array	Specifies the cipher suites supported by the custom security policy. (Multiple cipher suites are separated using colons.) Multiple cipher suites can be queried in the format of <i>ciphers=xxx&ciphers=xxx</i> .

Request Parameters

Table 4-141 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-142 Response body parameters

Parameter	Type	Description
security_policies	Array of SecurityPolicy objects	Lists the security policies.
request_id	String	Specifies the request ID. The value is automatically generated.
page_info	PageInfo object	Shows pagination information.

Table 4-143 SecurityPolicy

Parameter	Type	Description
id	String	Specifies the ID of the custom security policy.
project_id	String	Specifies the project ID of the custom security policy.

Parameter	Type	Description
name	String	Specifies the name of the custom security policy.
description	String	Provides supplementary information about the custom security policy.
listeners	Array of ListenerRef objects	Specifies the listeners that use the custom security policies.
protocols	Array of strings	Lists the TLS protocols supported by the custom security policy.
ciphers	Array of strings	Lists the cipher suites supported by the custom security policy.
created_at	String	Specifies the time when the custom security policy was created.
updated_at	String	Specifies the time when the custom security policy was updated.

Table 4-144 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-145 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

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"
  }, {
    "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"
  } ],
  "page_info": {
    "next_marker": "04e5d426-628c-42db-867c-fcaefbed2cab",
    "previous_marker": "03cf511a-d130-445e-9b02-12d7049ddabf",
    "current_count": 2
  }
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.8.3 Querying Details of a Custom Security Policy

Function

This API is used to query 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 4-146 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
security_policy_id	Yes	String	Specifies the ID of the custom security policy.

Request Parameters

Table 4-147 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-148 Response body parameters

Parameter	Type	Description
security_policy	SecurityPolicy object	This API is used to query details of a custom security policy.
request_id	String	Specifies the request ID. The value is automatically generated.

Table 4-149 SecurityPolicy

Parameter	Type	Description
id	String	Specifies the ID of the custom security policy.
project_id	String	Specifies the project ID of the custom security policy.
name	String	Specifies the name of the custom security policy.

Parameter	Type	Description
description	String	Provides supplementary information about the custom security policy.
listeners	Array of ListenerRef objects	Specifies the listeners that use the custom security policies.
protocols	Array of strings	Lists the TLS protocols supported by the custom security policy.
ciphers	Array of strings	Lists the cipher suites supported by the custom security policy.
created_at	String	Specifies the time when the custom security policy was created.
updated_at	String	Specifies the time when the custom security policy was updated.

Table 4-150 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Example Requests

Querying 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"
  },
}
```

```
"request_id" : "dab5d1de-c115-4623-b21d-363478fa0af4"  
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.8.4 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 4-151 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
security_policy_id	Yes	String	Specifies the ID of the custom security policy.

Request Parameters

Table 4-152 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-153 Request body parameters

Parameter	Mandatory	Type	Description
security_policy	Yes	UpdateSecurityPolicyOption object	Specifies the custom security policy to be updated.

Table 4-154 UpdateSecurityPolicyOption

Parameter	Mandatory	Type	Description
name	No	String	Specifies the name of the custom security policy. Minimum: 0 Maximum: 255
description	No	String	Provides supplementary information about the custom security policy. Minimum: 0 Maximum: 255
protocols	No	Array of strings	Lists the TLS protocols supported by the custom security policy. Value options: TLSv1, TLSv1.1, TLSv1.2, and TLSv1.3 Array Length: 1 - 5

Parameter	Mandatory	Type	Description
ciphers	No	Array of strings	<p>Lists the cipher suites supported by the custom security policy. The following cipher suites are supported:</p> <p>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_GCM_SHA256,TLS_AES_128_CCM_8_SHA256</p> <p>Note:</p> <ul style="list-style-type: none"> • The protocol and cipher suite must match. At least one cipher suite must match the protocol. • You can match the protocol and cipher suite based on system security policy. <p>Array Length: 1 - 30</p>

Response Parameters

Status code: 200

Table 4-155 Response body parameters

Parameter	Type	Description
security_policy	SecurityPolicy object	Specifies the custom security policy that has been updated.
request_id	String	Specifies the request ID. The value is automatically generated.

Table 4-156 SecurityPolicy

Parameter	Type	Description
id	String	Specifies the ID of the custom security policy.
project_id	String	Specifies the project ID of the custom security policy.
name	String	Specifies the name of the custom security policy.
description	String	Provides supplementary information about the custom security policy.
listeners	Array of ListenerRef objects	Specifies the listeners that use the custom security policies.
protocols	Array of strings	Lists the TLS protocols supported by the custom security policy.
ciphers	Array of strings	Lists the cipher suites supported by the custom security policy.
created_at	String	Specifies the time when the custom security policy was created.
updated_at	String	Specifies the time when the custom security policy was updated.

Table 4-157 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

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"
  }
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.8.5 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 4-158 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
security_policy_id	Yes	String	Specifies the ID of the custom security policy.

Request Parameters

Table 4-159 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

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

Status Codes

Status Code	Description
204	Successful request.

Error Codes

See [Error Codes](#).

4.8.6 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 4-160 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-161 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-162 Response body parameters

Parameter	Type	Description
system_security_policies	Array of SystemSecurityPolicy objects	Lists system security policies.
request_id	String	Specifies the request ID. The value is automatically generated.

Table 4-163 SystemSecurityPolicy

Parameter	Type	Description
name	String	Specifies the name of the system security policy.
protocols	String	Lists the TLS protocols supported by the system security policy.
ciphers	String	Lists the cipher suites supported by the system security policy.
project_id	String	Specifies the project ID.

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",
"cipher" : "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",
"cipher" : "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",
"cipher" : "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",
"cipher" : "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",
"cipher" : "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",
"cipher" : "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",
"cipher" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-RSA-
AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256"
}
}

```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.9 IP Address Group

4.9.1 Creating an IP Address Group

Function

This API is used to create an IP address group. The IP address can contain IP addresses or CIDR blocks. 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, only 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 4-164 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-165 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-166 Request body parameters

Parameter	Mandatory	Type	Description
ipgroup	Yes	CreateIpGroupOption object	Specifies the request body for creating an IP address group.

Table 4-167 CreatelpGroupOption

Parameter	Mandatory	Type	Description
project_id	No	String	Specifies the project ID of the IP address group. Minimum: 1 Maximum: 32
description	No	String	Provides supplementary information about the IP address group. Minimum: 0 Maximum: 255
name	No	String	Specifies the IP address group name. Minimum: 0 Maximum: 255
ip_list	Yes	Array of CreatelpGroupIpOption objects	Specifies the IP addresses or CIDR blocks in the IP address group. [] indicates any IP address. Array Length: 0 - 300
enterprise_project_id	No	String	Specifies the ID of the enterprise project that the IP address group belongs to.

Table 4-168 CreatelpGroupIpOption

Parameter	Mandatory	Type	Description
ip	Yes	String	Specifies the IP addresses in the IP address group.
description	No	String	Provides remarks about the IP address group. Minimum: 0 Maximum: 255

Response Parameters

Status code: 201

Table 4-169 Response body parameters

Parameter	Type	Description
ipgroup	IpGroup object	Specifies the response body for creating an IP address group.
request_id	String	Specifies the request ID. The value is automatically generated.

Table 4-170 IpGroup

Parameter	Type	Description
id	String	Specifies the ID of the IP address group.
name	String	Specifies the IP address group name.
description	String	Specifies the time when the IP address group was updated.
ip_list	Array of IpInfo objects	Specifies the IP addresses or CIDR blocks in the IP address group. [] indicates any IP address. Array Length: 0 - 300
listeners	Array of ListenerRef objects	Lists the IDs of listeners with which the IP address group is associated.
project_id	String	Specifies the project ID of the IP address group.
enterprise_project_id	String	Specifies the enterprise project ID of the IP address group.
created_at	String	Specifies the time when the IP address group was created.
updated_at	String	Specifies the time when the IP address group was updated.

Table 4-171 IpInfo

Parameter	Type	Description
ip	String	Specifies the IP addresses in the IP address group.
description	String	Provides remarks about the IP address group. Minimum: 0 Maximum: 255

Table 4-172 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

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"
  }
}
```

Status Codes

Status Code	Description
201	Normal response to POST requests.

Error Codes

See [Error Codes](#).

4.9.2 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 4-173 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-174 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the last record on the previous page. Note: <ul style="list-style-type: none">This parameter must be used together with limit.If this parameter is not specified, the first page will be queried.This parameter cannot be left blank or set to an invalid ID.

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records on each page. Minimum: 0 Maximum: 2000 Default: 2000
page_reverse	No	Boolean	Specifies whether to use reverse query. Values: <ul style="list-style-type: none">• true: Query the previous page.• false (default): Query the next page. Note: <ul style="list-style-type: none">• This parameter must be used together with limit.• If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker.
id	No	Array	Specifies the ID of the IP address group.
name	No	Array	Specifies the name of the IP address group.
description	No	Array	Provides supplementary information about the IP address group.
ip_list	No	Array	Lists the IP addresses in the IP address group. Multiple IP addresses are separated with commas.
enterprise_project_id	No	Array	Specifies the enterprise project ID.

Request Parameters

Table 4-175 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-176 Response body parameters

Parameter	Type	Description
ipgroups	Array of IpGroup objects	Lists the returned IP address groups.
request_id	String	Specifies the request ID. The value is automatically generated.
page_info	PageInfo object	Shows pagination information.

Table 4-177 IpGroup

Parameter	Type	Description
id	String	Specifies the ID of the IP address group.
name	String	Specifies the IP address group name.
description	String	Specifies the time when the IP address group was updated.
ip_list	Array of IpInfo objects	Specifies the IP addresses or CIDR blocks in the IP address group. [] indicates any IP address. Array Length: 0 - 300
listeners	Array of ListenerRef objects	Lists the IDs of listeners with which the IP address group is associated.
project_id	String	Specifies the project ID of the IP address group.
enterprise_project_id	String	Specifies the enterprise project ID of the IP address group.
created_at	String	Specifies the time when the IP address group was created.
updated_at	String	Specifies the time when the IP address group was updated.

Table 4-178 IpInfo

Parameter	Type	Description
ip	String	Specifies the IP addresses in the IP address group.
description	String	Provides remarks about the IP address group. Minimum: 0 Maximum: 255

Table 4-179 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-180 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

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"
    } ],
    "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"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.9.3 Viewing Details of an IP Address Group

Function

This API is used to view details of an IP address group.

Calling Method

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

URI

GET /v3/{project_id}/elb/ipgroups/{ipgroup_id}

Table 4-181 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
ipgroup_id	Yes	String	Specifies the ID of the IP address group.

Request Parameters

Table 4-182 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200**Table 4-183** Response body parameters

Parameter	Type	Description
ipgroup	IpGroup object	Specifies the IP address group.
request_id	String	Specifies the request ID. The value is automatically generated.

Table 4-184 IpGroup

Parameter	Type	Description
id	String	Specifies the ID of the IP address group.
name	String	Specifies the IP address group name.
description	String	Specifies the time when the IP address group was updated.
ip_list	Array of IpInfo objects	Specifies the IP addresses or CIDR blocks in the IP address group. [] indicates any IP address. Array Length: 0 - 300
listeners	Array of ListenerRef objects	Lists the IDs of listeners with which the IP address group is associated.
project_id	String	Specifies the project ID of the IP address group.
enterprise_project_id	String	Specifies the enterprise project ID of the IP address group.
created_at	String	Specifies the time when the IP address group was created.
updated_at	String	Specifies the time when the IP address group was updated.

Table 4-185 IpInfo

Parameter	Type	Description
ip	String	Specifies the IP addresses in the IP address group.
description	String	Provides remarks about the IP address group. Minimum: 0 Maximum: 255

Table 4-186 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Example Requests

Viewing 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"  
  }  
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.9.4 Updating an IP Address Group

Function

This API is used to update an IP address group. All IP addresses in the IP address group will be overwritten, and the IP addresses that are not included in the **ip_list** parameter in the request body will be removed. The IP address can contain IP addresses or CIDR blocks. 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, only 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

PUT /v3/{project_id}/elb/ipgroups/{ipgroup_id}

Table 4-187 Path Parameters

Parameter	Mandatory	Type	Description
ipgroup_id	Yes	String	Specifies the ID of the IP address group.
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-188 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-189 Request body parameters

Parameter	Mandatory	Type	Description
ipgroup	Yes	UpdateIpGroupOption object	Specifies the IP address group.

Table 4-190 UpdateIpGroupOption

Parameter	Mandatory	Type	Description
description	No	String	Provides supplementary information about the IP address group. Minimum: 0 Maximum: 255
name	No	String	Specifies the IP address group name. Minimum: 0 Maximum: 255
ip_list	No	Array of UpdateIpGroupOption objects	Lists the IP addresses in the IP address group. Array Length: 0 - 300

Table 4-191 UpdateIpGroupIpOption

Parameter	Mandatory	Type	Description
ip	Yes	String	Specifies the IP addresses in the IP address group.
description	No	String	Provides remarks about the IP address group. Minimum: 0 Maximum: 255

Response Parameters

Status code: 200

Table 4-192 Response body parameters

Parameter	Type	Description
ipgroup	IpGroup object	Specifies the IP address group.
request_id	String	Specifies the request ID. The value is automatically generated.

Table 4-193 IpGroup

Parameter	Type	Description
id	String	Specifies the ID of the IP address group.
name	String	Specifies the IP address group name.
description	String	Specifies the time when the IP address group was updated.
ip_list	Array of IpInfo objects	Specifies the IP addresses or CIDR blocks in the IP address group. [] indicates any IP address. Array Length: 0 - 300
listeners	Array of ListenerRef objects	Lists the IDs of listeners with which the IP address group is associated.
project_id	String	Specifies the project ID of the IP address group.
enterprise_project_id	String	Specifies the enterprise project ID of the IP address group.
created_at	String	Specifies the time when the IP address group was created.
updated_at	String	Specifies the time when the IP address group was updated.

Table 4-194 IpInfo

Parameter	Type	Description
ip	String	Specifies the IP addresses in the IP address group.
description	String	Provides remarks about the IP address group. Minimum: 0 Maximum: 255

Table 4-195 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

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"
  }
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.9.5 Deleting an IP Address Group

Function

This API is used to delete an IP address group.

Calling Method

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

URI

DELETE /v3/{project_id}/elb/ipgroups/{ipgroup_id}

Table 4-196 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
ipgroup_id	Yes	String	Specifies the ID of the IP address group.

Request Parameters

Table 4-197 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

None

Example Requests

Deleting an IP address group

```
DELETE https://{ELB_Endpoint}/v3/45977fa2dbd7482098dd68d0d8970117/elb/ipgroups/  
8722e0e0-9cc9-4490-9660-8c9a5732fbb0
```

Example Responses

None

Status Codes

Status Code	Description
204	Successful request.

Error Codes

See [Error Codes](#).

4.9.6 Updating IP Addresses in an IP Address Group

Function

This API is used to update the IP addresses in an IP address group.

Calling Method

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

URI

POST /v3/{project_id}/elb/ipgroups/{ipgroup_id}/iplist/create-or-update

Table 4-198 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
ipgroup_id	Yes	String	Specifies the ID of the IP address group.

Request Parameters

Table 4-199 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	No	String	Specifies the token used for IAM authentication.

Table 4-200 Request body parameters

Parameter	Mandatory	Type	Description
ipgroup	No	UpdateIpListOption object	Specifies the request parameter for updating the IP addresses of an IP address group.

Table 4-201 UpdateIpListOption

Parameter	Mandatory	Type	Description
name	No	String	Specifies the name of the IP address group.
ip_list	No	Array of UpdateIpGroupOption objects	Specifies the IP addresses in the IP address group.
description	No	String	Specifies supplementary information about the IP address group.

Table 4-202 UpdateIpGroupOption

Parameter	Mandatory	Type	Description
ip	Yes	String	Specifies the IP addresses in the IP address group.
description	No	String	Provides remarks about the IP address group. Minimum: 0 Maximum: 255

Response Parameters

Status code: 200

Table 4-203 Response body parameters

Parameter	Type	Description
ipgroup	IpGroup object	Shows IP address information.

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.

Table 4-204 IpGroup

Parameter	Type	Description
id	String	Specifies the ID of the IP address group.
name	String	Specifies the IP address group name.
description	String	Specifies the time when the IP address group was updated.
ip_list	Array of IpInfo objects	Specifies the IP addresses or CIDR blocks in the IP address group. [] indicates any IP address. Array Length: 0 - 300
listeners	Array of ListenerRef objects	Lists the IDs of listeners with which the IP address group is associated.
project_id	String	Specifies the project ID of the IP address group.
enterprise_project_id	String	Specifies the enterprise project ID of the IP address group.
created_at	String	Specifies the time when the IP address group was created.
updated_at	String	Specifies the time when the IP address group was updated.

Table 4-205 IpInfo

Parameter	Type	Description
ip	String	Specifies the IP addresses in the IP address group.
description	String	Provides remarks about the IP address group. Minimum: 0 Maximum: 255

Table 4-206 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Example Requests

Updating IP addresses in an IP address group

PUT 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"
  }
}
```


Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.9.7 Deleting IP Addresses from an IP Address Group

Function

This API is used to delete IP addresses from an IP address group.

Calling Method

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

URI

POST /v3/{project_id}/elb/ipgroups/{ipgroup_id}/iplist/batch-delete

Table 4-207 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
ipgroup_id	Yes	String	Specifies the ID of the IP address group.

Request Parameters

Table 4-208 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	No	String	Specifies the token used for IAM authentication.

Table 4-209 Request body parameters

Parameter	Mandatory	Type	Description
ipgroup	No	BatchDeleteIpListOption object	Specifies IP addresses that will be deleted from an IP address group in batches.

Table 4-210 BatchDeleteIpListOption

Parameter	Mandatory	Type	Description
ip_list	No	Array of IpGroupIp objects	Specifies IP addresses.

Table 4-211 IpGroupIp

Parameter	Mandatory	Type	Description
ip	Yes	String	Specifies an IP address or IP address range.

Response Parameters

Status code: 200

Table 4-212 Response body parameters

Parameter	Type	Description
ipgroup	IpGroup object	Shows IP address information.
request_id	String	Specifies the request ID. The value is automatically generated.

Table 4-213 IpGroup

Parameter	Type	Description
id	String	Specifies the ID of the IP address group.
name	String	Specifies the IP address group name.
description	String	Specifies the time when the IP address group was updated.

Parameter	Type	Description
ip_list	Array of IpInfo objects	Specifies the IP addresses or CIDR blocks in the IP address group. [] indicates any IP address. Array Length: 0 - 300
listeners	Array of ListenerRef objects	Lists the IDs of listeners with which the IP address group is associated.
project_id	String	Specifies the project ID of the IP address group.
enterprise_project_id	String	Specifies the enterprise project ID of the IP address group.
created_at	String	Specifies the time when the IP address group was created.
updated_at	String	Specifies the time when the IP address group was updated.

Table 4-214 IpInfo

Parameter	Type	Description
ip	String	Specifies the IP addresses in the IP address group.
description	String	Provides remarks about the IP address group. Minimum: 0 Maximum: 255

Table 4-215 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Example Requests

Deleting IP addresses from an IP address group

```
PUT 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"  
  }  
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.10 Listener

4.10.1 Adding a Listener

Function

This API is used to add a listener to a 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 be IP.

QUIC is not supported.

Calling Method

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

URI

POST /v3/{project_id}/elb/listeners

Table 4-216 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-217 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-218 Request body parameters

Parameter	Mandatory	Type	Description
listener	Yes	CreateListenerOption object	Specifies the listener.

Table 4-219 CreateListenerOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the listener. The value can only be true . This parameter is unsupported. Please do not use it.
default_pool_id	No	String	Specifies the ID of the default backend server group. If there is no matched forwarding policy, requests will be forwarded to the default backend server for processing. Minimum: 1 Maximum: 36
client_ca_tls_container_ref	No	String	Specifies the ID of the CA certificate used by the listener. This parameter is available only when type is set to client . Minimum: 1 Maximum: 128
default_tls_container_ref	No	String	Specifies the ID of the server certificate used by the listener. This parameter is available only when the listener's protocol is HTTPS, TLS, or QUIC and type is set to server . Minimum: 1 Maximum: 128
description	No	String	Provides supplementary information about the listener. Minimum: 0 Maximum: 255

Parameter	Mandatory	Type	Description
http2_enable	No	Boolean	Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the load balancer. However, connections between the load balancer and backend servers still use HTTP/1.x by default. This parameter is available only for HTTPS listeners. If you configure this parameter for listeners with other protocols, it will not take effect.
insert_headers	No	ListenerInsertHeaders object	Specifies the HTTP header fields that can transmit required information to backend servers. For example, the X-Forwarded-ELB-IP header field can transmit the EIP of the load balancer to backend servers.
loadbalancer_id	Yes	String	Specifies the ID of the load balancer that the listener is added to. Note: A listener can be added to only one load balancer. Minimum: 1 Maximum: 36
name	No	String	Specifies the listener name. Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details. Minimum: 0 Maximum: 255
project_id	No	String	Specifies the project ID. Minimum: 1 Maximum: 32

Parameter	Mandatory	Type	Description
protocol	Yes	String	Specifies the protocol used by the listener. The value can be TCP , UDP , HTTP , HTTPS , or IP . IP is only available for listeners that will be added to gateway load balancers. QUIC is not supported.
protocol_port	No	Integer	Specifies the port used by the listener. The QUIC listener port cannot be 4789 or the same as the UDP listener port. If this parameter is set to 0 , port_ranges is required. Minimum: 0 Maximum: 65535
sni_container_refs	No	Array of strings	Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener. Note: <ul style="list-style-type: none"> • The domain names of all SNI certificates must be unique. • The total number of domain names of all SNI certificates cannot exceed 30. Array Length: 0 - 50
sni_match_algo	No	String	Specifies how wildcard domain name matches with the SNI certificates used by the listener. longest_suffix indicates longest suffix match. wildcard indicates wildcard match. The default value is wildcard .
tags	No	Array of Tag objects	Lists the tags.

Parameter	Mandatory	Type	Description
tls_ciphers_policy	No	String	<p>Specifies the security policy used by the listener.</p> <p>Values: tls-1-0-inherit, tls-1-0, tls-1-1, tls-1-2-strict, and tls-1-0 (default).</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter will take effect only for HTTPS listeners. • If both security_policy_id and tls_ciphers_policy are specified, only security_policy_id will take effect. • The priority of the encryption suite from high to low is: ecc suite, rsa suite. <p>TLS1.3 is unsupported.</p>
security_policy_id	No	String	<p>Specifies the ID of the custom security policy.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter will take effect only for HTTPS listeners. • If both security_policy_id and tls_ciphers_policy are specified, only security_policy_id will take effect. • The priority of the encryption suite from high to low is: ecc suite, rsa suite. <p>TLS1.3 is unsupported.</p> <p>Minimum: 1</p> <p>Maximum: 36</p>

Parameter	Mandatory	Type	Description
enable_member_retry	No	Boolean	<p>Specifies whether to enable health check retries for backend servers. The value can be true (enable health check retries) or false (disable health check retries). The default value is true.</p> <p>Note:</p> <ul style="list-style-type: none">• This parameter is available only when protocol is set to HTTP, or HTTPS.
keepalive_timeout	No	Integer	<p>Specifies the idle timeout duration, in seconds. If there are no requests reaching the load balancer after the idle timeout duration elapses, the load balancer will disconnect the connection with the client and establish a new connection when there is a new request.</p> <ul style="list-style-type: none">• For TCP and IP listeners, the value ranges from 10 to 4000, and the default value is 300. <p>+For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0 to 4000, and the default value is 60.</p> <ul style="list-style-type: none">• For UDP listeners of shared load balancers, this parameter does not take effect.

Parameter	Mandatory	Type	Description
client_timeout	No	Integer	<p>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"> • If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted. • If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected. <p>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p> <p>Minimum: 1 Maximum: 300 Default: 60</p>
member_timeout	No	Integer	<p>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>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p> <p>Minimum: 1 Maximum: 300 Default: 60</p>
ipgroup	No	CreateListenerIpGroupOption object	Specifies the IP address group associated with the listener.

Parameter	Mandatory	Type	Description
transparent_client_ip_enable	No	Boolean	Specifies whether to pass source IP addresses of the clients to backend servers. For all listeners, the default value is true if this parameter is not passed.
proxy_protocol_enable	No	Boolean	Specifies whether to enable the ProxyProtocol option 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.

Parameter	Mandatory	Type	Description
enhance_l7policy_enable	No	Boolean	<p>Specifies whether to enable advanced forwarding. If advanced forwarding is enabled, more flexible forwarding policies and rules are supported. The value can be true (enable advanced forwarding) or false (disable advanced forwarding), and the default value is false.</p> <p>The following scenarios are supported:</p> <ul style="list-style-type: none">• action can be set to REDIRECT_TO_URL (requests will be redirected to another URL) or Fixed_RESPONSE (a fixed response body will be returned to clients).• Parameters priority, redirect_url_config, and fixed_response_config can be specified in a forwarding policy.• Parameter type can be set to METHOD, HEADER, QUERY_STRING, or SOURCE_IP for a forwarding rule.• If type is set to HOST_NAME for a forwarding rule, the value parameter of the forwarding rule supports wildcard asterisks (*).• The conditions parameter can be specified for forwarding rules. <p>NOTE Value false can't be used after this parameter was set to true.</p>

Parameter	Mandatory	Type	Description
quic_config	No	CreateListenerQuicConfigOption object	<p>Specifies the QUIC configuration for the current listener. This parameter is valid only when protocol is set to HTTPS.</p> <p>For a TCP/UDP/HTTP/QUIC listener, if this parameter is not left blank, an error will be reported.</p> <p>NOTE The client sends a normal HTTP request that contains information indicating that the QUIC protocol is supported.</p> <p>If QUIC upgrade is enabled for the listeners, QUIC port and version information will be added to the response header.</p> <p>When the client sends both HTTPS and QUIC requests to the server, if the QUIC request is successfully sent, QUIC protocol will be used for subsequent communications.</p> <p>QUIC protocol is not supported.</p>

Table 4-220 ListenerInsertHeaders

Parameter	Mandatory	Type	Description
X-Forwarded-ELB-IP	No	Boolean	<p>Specifies whether to transparently transmit the load balancer EIP to backend servers. If X-Forwarded-ELB-IP is set to true, the load balancer EIP will be stored in the HTTP header and passed to backend servers.</p>

Parameter	Mandatory	Type	Description
X-Forwarded-Port	No	Boolean	Specifies whether to transparently transmit the listening port of the load balancer to backend servers. If X-Forwarded-Port is set to true , the listening port of the load balancer will be stored in the HTTP header and passed to backend servers.
X-Forwarded-For-Port	No	Boolean	Specifies whether to transparently transmit the source port of the client to backend servers. If X-Forwarded-For-Port is set to true , the source port of the client will be stored in the HTTP header and passed to backend servers.
X-Forwarded-Host	No	Boolean	Specifies whether to rewrite the X-Forwarded-Host header. If X-Forwarded-Host is set to true , X-Forwarded-Host in the request header from the clients can be set to Host in the request header sent from the load balancer to backend servers.
X-Forwarded-Proto	No	Boolean	If X-Forwarded-Proto is set to true , the listener protocol of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Real-IP	No	Boolean	If X-Real-IP is set to true , the source IP address of the client can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-ELB-ID	No	Boolean	If X-Forwarded-ELB-ID is set to true , the load balancer ID can be transferred to backend servers through the HTTP header of the packet.

Parameter	Mandatory	Type	Description
X-Forwarded-TLS-Certificate-ID	No	Boolean	If X-Forwarded-TLS-Certificate-ID is set to true , the certificate ID of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-TLS-Protocol	No	Boolean	If X-Forwarded-TLS-Protocol is set to true , the algorithm protocol of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-TLS-Cipher	No	Boolean	If X-Forwarded-TLS-Cipher is set to true , the algorithm suite of the load balancer can be transferred to backend servers through the HTTP header of the packet.

Table 4-221 Tag

Parameter	Mandatory	Type	Description
key	No	String	Specifies the tag key. Minimum: 1 Maximum: 36
value	No	String	Specifies the tag value. Minimum: 0 Maximum: 43

Table 4-222 CreateListenerIpGroupOption

Parameter	Mandatory	Type	Description
ipgroup_id	Yes	String	<p>Specifies the ID of the IP address group associated with the listener.</p> <ul style="list-style-type: none">• If ip_list is set to an empty array [] and type to whitelist, no IP addresses are allowed to access the listener.• If ip_list is set to an empty array [] and type to blacklist, any IP address is allowed to access the listener. <p>Minimum: 1 Maximum: 3600</p>
enable_ipgroup	No	Boolean	<p>Specifies whether to enable access control.</p> <ul style="list-style-type: none">• true (default): Access control will be enabled.• false: Access control will be disabled.
type	No	String	<p>Specifies how access to the listener is controlled.</p> <ul style="list-style-type: none">• white (default): A whitelist will be configured. Only IP addresses in the whitelist can access the listener.• black: A blacklist will be configured. IP addresses in the blacklist are not allowed to access the listener.

Table 4-223 CreateListenerQuicConfigOption

Parameter	Mandatory	Type	Description
quic_listener_id	Yes	String	Specifies the ID of the QUIC listener. Specifies the specified listener. The specified quic_listener_id must exist. The listener protocol must be QUIC and cannot be set to null , otherwise, it will conflict with enable_quic_upgrade . QUIC protocol is not supported.
enable_quic_upgrade	No	Boolean	Specifies whether to enable QUIC upgrade. True : QUIC upgrade is enabled. False (default): QUIC upgrade is disabled. HTTPS listeners can be upgraded to QUIC listeners. QUIC protocol is not supported. Default: false

Response Parameters

Status code: 201

Table 4-224 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
listener	Listener object	Specifies the listener.

Table 4-225 Listener

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the listener.
client_ca_tls_container_ref	String	Specifies the ID of the CA certificate used by the listener. This parameter is available only when type is set to client .

Parameter	Type	Description
connection_limit	Integer	Specifies the maximum number of connections that the load balancer can establish with backend servers. The value -1 indicates that the number of connections is not limited. This parameter is unsupported. Please do not use it.
created_at	String	Specifies the time when the listener was created, 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	Specifies the ID of the default backend server group. If there is no matched forwarding policy, requests are forwarded to the default backend server.
default_tls_container_ref	String	Specifies the ID of the server certificate used by the listener.
description	String	Provides supplementary information about the listener.
http2_enable	Boolean	Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the listener. However, connections between the load balancer and backend servers still use HTTP/1.x by default. Note the following: <ul style="list-style-type: none">• This parameter is available only for HTTPS listeners.• If you configure this parameter for listeners with other protocols, it will not take effect.
id	String	Specifies the listener ID.
insert_headers	ListenerInsertHeaders object	Specifies the HTTP header fields that can transmit required information to backend servers. For example, the X-Forwarded-ELB-IP header field can transmit the EIP of the load balancer to backend servers.
loadbalancers	Array of LoadBalancerRef objects	Specifies the ID of the load balancer that the listener is added to. A listener can be added to only one load balancer.
name	String	Specifies the listener name. Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details.
project_id	String	Specifies the ID of the project where the listener is used.

Parameter	Type	Description
protocol	String	Specifies the protocol used by the listener. The value can be TCP , UDP , HTTP , HTTPS , or IP . IP is only available for listeners that will be added to gateway load balancers.
protocol_port	Integer	Specifies the port used by the listener. The QUIC listener port cannot be 4789 or the same as the UDP listener port. If this parameter is set to 0 , port_ranges is required. Minimum: 0 Maximum: 65535
sni_container_refs	Array of strings	Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener. Note: <ul style="list-style-type: none">• The domain names of all SNI certificates must be unique.• The total number of domain names of all SNI certificates cannot exceed 30.
sni_match_algo	String	Specifies how wildcard domain name matches with the SNI certificates used by the listener. longest_suffix indicates longest suffix match. wildcard indicates wildcard match. The default value is wildcard .
tags	Array of Tag objects	Lists the tags.
updated_at	String	Specifies the time when the listener was updated, 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	Specifies the security policy used by the listener. Values: tls-1-0-inherit , tls-1-0 , tls-1-1 , tls-1-2-strict , and tls-1-0 (default). Note: <ul style="list-style-type: none">• This parameter will take effect only for HTTPS listeners.• If both security_policy_id and tls_ciphers_policy are specified, only security_policy_id will take effect.• The priority of the encryption suite from high to low is: ecc suite, rsa suite. TLS1.3 is unsupported.

Parameter	Type	Description
security_policy_id	String	<p>Specifies the ID of the custom security policy.</p> <p>Note:</p> <ul style="list-style-type: none"> This parameter will take effect only for HTTPS listeners. If both security_policy_id and tls_ciphers_policy are specified, only security_policy_id will take effect. The priority of the encryption suite from high to low is: ecc suite, rsa suite. TLS1.3 is unsupported.
enable_member_retry	Boolean	<p>Specifies whether to enable health check retries for backend servers. The value can be true (enable health check retries) or false (disable health check retries). The default value is true.</p> <p>Note:</p> <ul style="list-style-type: none"> This parameter is available only when protocol is set to HTTP, or HTTPS.
keepalive_timeout	Integer	<p>Specifies the idle timeout duration, in seconds. If there are no requests reaching the load balancer after the idle timeout duration elapses, the load balancer will disconnect the connection with the client and establish a new connection when there is a new request.</p> <ul style="list-style-type: none"> For TCP and IP listeners, the value ranges from 10 to 4000, and the default value is 300. <p>+For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0 to 4000, and the default value is 60.</p> <ul style="list-style-type: none"> For UDP listeners of shared load balancers, this parameter does not take effect.

Parameter	Type	Description
client_timeout	Integer	<p>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">• If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted.• If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected. <p>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p>
member_timeout	Integer	<p>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>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p>
ipgroup	ListenerIpGroup object	<p>Specifies the IP address group associated with the listener.</p>
transparent_client_ip_enable	Boolean	<p>Specifies whether to pass source IP addresses of the clients to backend servers.</p> <p>For all listeners, the default value is true if this parameter is not passed.</p>
proxy_protocol_enable	Boolean	<p>Specifies whether to enable the ProxyProtocol option 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>

Parameter	Type	Description
enhance_l7policy_enable	Boolean	<p>Specifies whether to enable advanced forwarding. The value can be true (enable advanced forwarding) or false (disable advanced forwarding), and the default value is false.</p> <ul style="list-style-type: none"> • If this function is enabled, action can be set to REDIRECT_TO_URL (requests will be redirected to another URL) or Fixed_RESPONSE (a fixed response body will be returned to clients). • Parameters priority, redirect_url_config, and fixed_response_config can be specified in a forwarding policy. • Parameter type can be set to METHOD, HEADER, QUERY_STRING, or SOURCE_IP for a forwarding rule . • If type is set to HOST_NAME for a forwarding rule, the value parameter of the forwarding rule supports wildcard asterisks (*). • The conditions parameter can be specified for forwarding rules. <p>NOTE Value false can't be used after this parameter was set to true.</p> <p>Default: false</p>
quic_config	ListenerQuic Config object	<p>Specifies the QUIC configuration for the current listener. This parameter is valid only when protocol is set to HTTPS.</p> <p>For a TCP/UDP/HTTP/QUIC listener, if this parameter is not left blank, an error will be reported.</p> <p>NOTE The client sends a normal HTTP request that contains information indicating that the QUIC protocol is supported.</p> <p>If QUIC upgrade is enabled for the listeners, QUIC port and version information will be added to the response header.</p> <p>When the client sends both HTTPS and QUIC requests to the server, if the QUIC request is successfully sent, QUIC protocol will be used for subsequent communications.</p> <p>QUIC protocol is not supported.</p>

Table 4-226 ListenerInsertHeaders

Parameter	Type	Description
X-Forwarded-ELB-IP	Boolean	Specifies whether to transparently transmit the load balancer EIP to backend servers. If X-Forwarded-ELB-IP is set to true , the load balancer EIP will be stored in the HTTP header and passed to backend servers.
X-Forwarded-Port	Boolean	Specifies whether to transparently transmit the listening port of the load balancer to backend servers. If X-Forwarded-Port is set to true , the listening port of the load balancer will be stored in the HTTP header and passed to backend servers.
X-Forwarded-For-Port	Boolean	Specifies whether to transparently transmit the source port of the client to backend servers. If X-Forwarded-For-Port is set to true , the source port of the client will be stored in the HTTP header and passed to backend servers.
X-Forwarded-Host	Boolean	Specifies whether to rewrite the X-Forwarded-Host header. If X-Forwarded-Host is set to true , X-Forwarded-Host in the request header from the clients can be set to Host in the request header sent from the load balancer to backend servers.
X-Forwarded-Proto	Boolean	If X-Forwarded-Proto is set to true , the listener protocol of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Real-IP	Boolean	If X-Real-IP is set to true , the source IP address of the client can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-ELB-ID	Boolean	If X-Forwarded-ELB-ID is set to true , the load balancer ID can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-TLS-Certificate-ID	Boolean	If X-Forwarded-TLS-Certificate-ID is set to true , the certificate ID of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-TLS-Protocol	Boolean	If X-Forwarded-TLS-Protocol is set to true , the algorithm protocol of the load balancer can be transferred to backend servers through the HTTP header of the packet.

Parameter	Type	Description
X-Forwarded-TLS-Cipher	Boolean	If X-Forwarded-TLS-Cipher is set to true , the algorithm suite of the load balancer can be transferred to backend servers through the HTTP header of the packet.

Table 4-227 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-228 Tag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: 1 Maximum: 36
value	String	Specifies the tag value. Minimum: 0 Maximum: 43

Table 4-229 ListenerIpGroup

Parameter	Type	Description
ipgroup_id	String	Specifies the ID of the IP address group associated with the listener. This parameter is mandatory when you create the IP address group and is optional when you update the IP address group. The specified IP address group must exist, and the value cannot be null .
enable_ipgroup	Boolean	Specifies whether to enable access control. <ul style="list-style-type: none">• true: Access control is enabled.• false: Access control is disabled. A listener with access control enabled can be directly deleted.

Parameter	Type	Description
type	String	Specifies how access to the listener is controlled. <ul style="list-style-type: none"> • white: A whitelist is configured. Only IP addresses in the whitelist can access the listener. • black: A blacklist is configured. IP addresses in the blacklist are not allowed to access the listener.

Table 4-230 ListenerQuicConfig

Parameter	Type	Description
quic_listener_id	String	Specifies the ID of the QUIC listener. This parameter is mandatory for creation and is optional for update. The specified quic_listener_id must exist. The listener protocol must be QUIC and cannot be set to null , otherwise, it will conflict with enable_quic_upgrade . QUIC protocol is not supported.
enable_quic_upgrade	Boolean	Specifies whether to enable QUIC upgrade. True : QUIC upgrade is enabled. False : QUIC upgrade is disabled. HTTPS listeners can be upgraded to QUIC listeners. QUIC protocol is not supported.

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 3: Adding an IP listener to a gateway load balancer

POST https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/listeners

```
{
  "listener": {
    "protocol": "IP",
    "loadbalancer_id": "098b2f68-af1c-41a9-8efd-69958722af62",
    "name": "My IP listener",
    "admin_state_up": true,
    "ipgroup": {
      "ipgroup_id": "0416b6f1-877f-4a51-987e-978b3f083542",
      "type": "black"
    }
  }
}
```

Example Responses

Status code: 201

Normal response to POST requests.

```
{
  "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-1-0",
    "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
  },
  "request_id": "f4c4aca8-df16-42e8-8836-33e4b8e9aa8e"
}
```

Status Codes

Status Code	Description
201	Normal response to POST requests.

Error Codes

See [Error Codes](#).

4.10.2 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 4-231 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-232 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records on each page. Minimum: 0 Maximum: 2000 Default: 2000

Parameter	Mandatory	Type	Description
marker	No	String	<p>Specifies the ID of the last record on the previous page.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter must be used together with limit. • If this parameter is not specified, the first page will be queried. • This parameter cannot be left blank or set to an invalid ID.
page_reverse	No	Boolean	<p>Specifies whether to use reverse query. Values:</p> <ul style="list-style-type: none"> • true: Query the previous page. • false (default): Query the next page. <p>Note:</p> <ul style="list-style-type: none"> • This parameter must be used together with limit. • If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker.
protocol_port	No	Array	<p>Specifies the port used by the listener. If the listener protocol is IP, the frontend port can only be 0. Multiple ports can be queried in the format of <i>protocol_port=xxx&protocol_port=xxx</i>.</p>
protocol	No	Array	<p>Specifies the protocol used by the listener.</p> <p>The value can be TCP, UDP, HTTP, HTTPS, or IP. IP is only available for listeners that will be added to gateway load balancers.</p> <p>QUIC is not supported.</p> <p>Multiple protocols can be queried in the format of <i>protocol=xxx&protocol=xxx</i>.</p>

Parameter	Mandatory	Type	Description
description	No	Array	Provides supplementary information about the listener. Multiple descriptions can be queried in the format of <i>description=xxx&description=xx</i> .
default_tls_container_ref	No	Array	Specifies the ID of the server certificate used by the listener. Multiple IDs can be queried in the format of <i>default_tls_container_ref=xxx&default_tls_container_ref=xxx</i> .
client_ca_tls_container_ref	No	Array	Specifies the ID of the CA certificate used by the listener. Multiple IDs can be queried in the format of <i>client_ca_tls_container_ref=xxx&client_ca_tls_container_ref=xx</i> .
admin_state_up	No	Boolean	Specifies the administrative status of the listener. This parameter is unsupported. Please do not use it.
connection_limit	No	Array	Specifies the maximum number of connections that the load balancer can establish with backend servers. The value -1 indicates that the number of connections is not limited. Multiple values can be queried in the format of <i>connection_limit=xxx&connection_limit=xxx</i> . This parameter is unsupported. Please do not use it.

Parameter	Mandatory	Type	Description
default_pool_id	No	Array	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. Multiple IDs can be queried in the format of <i>default_pool_id=xxx&default_pool_id=xxx</i> .
id	No	Array	Specifies the listener ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> .
name	No	Array	Specifies the name of the listener added to the load balancer. Multiple names can be queried in the format of <i>name=xxx&name=xxx</i> .
http2_enable	No	Boolean	Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the listener. However, connections between the load balancer and backend servers still use HTTP/1.x by default. This parameter is available only for HTTPS listeners. If you configure this parameter for listeners with other protocols, it will not take effect.
loadbalancer_id	No	Array	Specifies the ID of the load balancer that the listener is added to. Multiple IDs can be queried in the format of <i>loadbalancer_id=xxx&loadbalancer_id=xxx</i> .
tls_ciphers_policy	No	Array	Specifies the security policy used by the listener. Multiple security policies can be queried in the format of <i>tls_ciphers_policy=xxx&tls_ciphers_policy=xxx</i> .

Parameter	Mandatory	Type	Description
member_address	No	Array	Specifies the private IP address bound to the backend server. This parameter is used only as a query condition and is not included in the response. Multiple IP addresses can be queried in the format of <i>member_address=xxx&member_address=xxx</i> .
member_device_id	No	Array	Specifies the ID of the cloud server that serves as a backend server. This parameter is used only as a query condition and is not included in the response. Multiple IDs can be queried in the format of <i>member_device_id=xxx&member_device_id=xxx</i> .
enterprise_project_id	No	Array	Specifies the enterprise project ID. <ul style="list-style-type: none">• If this parameter is not passed, resources in the default enterprise project are queried, and authentication is performed based on the default enterprise project.• If this parameter is passed, its value can be the ID of an existing enterprise project (resources in the specific enterprise project are required) or all_granted_eps (resources in all enterprise projects are queried). Multiple IDs can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i> .

Parameter	Mandatory	Type	Description
enable_member_retry	No	Boolean	Specifies whether to enable health check retries for backend servers. The value can be true (enable health check retries) or false (disable health check retries).
member_timeout	No	Array	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. The value ranges from 1 to 300 . Multiple durations can be queried in the format of <i>member_timeout=xxx&member_timeout=xxx</i> .
client_timeout	No	Array	Specifies the timeout duration for waiting for a response from a client, in seconds. There are two situations: <ul style="list-style-type: none"> • If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted. • If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected. The value ranges from 1 to 300 . Multiple durations can be queried in the format of <i>client_timeout=xxx&client_timeout=xxx</i> .

Parameter	Mandatory	Type	Description
keepalive_timeout	No	Array	<p>Specifies the idle timeout duration, in seconds. If there are no requests reaching the load balancer after the idle timeout duration elapses, the load balancer will disconnect the connection with the client and establish a new connection when there is a new request.</p> <ul style="list-style-type: none">• For TCP and IP listeners, the value ranges from 10 to 4000.• For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0 to 4000. <p>Multiple durations can be queried in the format of <i>keepalive_timeout=xxx&keepalive_timeout=xxx</i>.</p>
transparent_client_ip_enable	No	Boolean	<p>Specifies whether to pass source IP addresses of the clients to backend servers.</p>
proxy_protocol_enable	No	Boolean	<p>Specifies whether to enable the ProxyProtocol option 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>
enhance_l7policy_enable	No	Boolean	<p>Specifies whether to enable advanced forwarding. If you enable this function, you can configure more flexible forwarding policies and rules.</p> <ul style="list-style-type: none">• true: Enable advanced forwarding.• false: Disable advanced forwarding.

Parameter	Mandatory	Type	Description
member_instance_id	No	Array	Specifies the backend server ID. This parameter is used only as a query condition and is not included in the response. Multiple IDs can be queried in the format of <i>member_instance_id=xxx&member_instance_id=xxx</i> .

Request Parameters

Table 4-233 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-234 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
page_info	PageInfo object	Shows pagination information about listeners.
listeners	Array of Listener objects	Lists the listeners.

Table 4-235 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result.
next_marker	String	Specifies the ID of the last record in the pagination query result.

Parameter	Type	Description
current_count	Integer	Specifies the number of records.

Table 4-236 Listener

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the listener.
client_ca_tls_container_ref	String	Specifies the ID of the CA certificate used by the listener. This parameter is available only when type is set to client .
connection_limit	Integer	Specifies the maximum number of connections that the load balancer can establish with backend servers. The value -1 indicates that the number of connections is not limited. This parameter is unsupported. Please do not use it.
created_at	String	Specifies the time when the listener was created, 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	Specifies the ID of the default backend server group. If there is no matched forwarding policy, requests are forwarded to the default backend server.
default_tls_container_ref	String	Specifies the ID of the server certificate used by the listener.
description	String	Provides supplementary information about the listener.
http2_enable	Boolean	Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the listener. However, connections between the load balancer and backend servers still use HTTP/1.x by default. Note the following: <ul style="list-style-type: none">• This parameter is available only for HTTPS listeners.• If you configure this parameter for listeners with other protocols, it will not take effect.
id	String	Specifies the listener ID.

Parameter	Type	Description
insert_headers	ListenerInsertHeaders object	Specifies the HTTP header fields that can transmit required information to backend servers. For example, the X-Forwarded-ELB-IP header field can transmit the EIP of the load balancer to backend servers.
loadbalancers	Array of LoadBalancerRef objects	Specifies the ID of the load balancer that the listener is added to. A listener can be added to only one load balancer.
name	String	Specifies the listener name. Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details.
project_id	String	Specifies the ID of the project where the listener is used.
protocol	String	Specifies the protocol used by the listener. The value can be TCP , UDP , HTTP , HTTPS , or IP . IP is only available for listeners that will be added to gateway load balancers.
protocol_port	Integer	Specifies the port used by the listener. The QUIC listener port cannot be 4789 or the same as the UDP listener port. If this parameter is set to 0 , port_ranges is required. Minimum: 0 Maximum: 65535
sni_container_refs	Array of strings	Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener. Note: <ul style="list-style-type: none">• The domain names of all SNI certificates must be unique.• The total number of domain names of all SNI certificates cannot exceed 30.
sni_match_algo	String	Specifies how wildcard domain name matches with the SNI certificates used by the listener. longest_suffix indicates longest suffix match. wildcard indicates wildcard match. The default value is wildcard .
tags	Array of Tag objects	Lists the tags.
updated_at	String	Specifies the time when the listener was updated, 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	<p>Specifies the security policy used by the listener.</p> <p>Values: tls-1-0-inherit, tls-1-0, tls-1-1, tls-1-2-strict, and tls-1-0 (default).</p> <p>Note:</p> <ul style="list-style-type: none">• This parameter will take effect only for HTTPS listeners.• If both security_policy_id and tls_ciphers_policy are specified, only security_policy_id will take effect.• The priority of the encryption suite from high to low is: ecc suite, rsa suite. <p>TLS1.3 is unsupported.</p>
security_policy_id	String	<p>Specifies the ID of the custom security policy.</p> <p>Note:</p> <ul style="list-style-type: none">• This parameter will take effect only for HTTPS listeners.• If both security_policy_id and tls_ciphers_policy are specified, only security_policy_id will take effect.• The priority of the encryption suite from high to low is: ecc suite, rsa suite. <p>TLS1.3 is unsupported.</p>
enable_member_retry	Boolean	<p>Specifies whether to enable health check retries for backend servers. The value can be true (enable health check retries) or false (disable health check retries). The default value is true.</p> <p>Note:</p> <ul style="list-style-type: none">• This parameter is available only when protocol is set to HTTP, or HTTPS.

Parameter	Type	Description
keepalive_timeout	Integer	<p>Specifies the idle timeout duration, in seconds. If there are no requests reaching the load balancer after the idle timeout duration elapses, the load balancer will disconnect the connection with the client and establish a new connection when there is a new request.</p> <ul style="list-style-type: none">For TCP and IP listeners, the value ranges from 10 to 4000, and the default value is 300. <p>+For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0 to 4000, and the default value is 60.</p> <ul style="list-style-type: none">For UDP listeners of shared load balancers, this parameter does not take effect.
client_timeout	Integer	<p>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">If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted.If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected. <p>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p>
member_timeout	Integer	<p>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>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p>
ipgroup	ListenerIpGroup object	Specifies the IP address group associated with the listener.
transparent_client_ip_enable	Boolean	<p>Specifies whether to pass source IP addresses of the clients to backend servers.</p> <p>For all listeners, the default value is true if this parameter is not passed.</p>

Parameter	Type	Description
proxy_protocol_enable	Boolean	Specifies whether to enable the ProxyProtocol option 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.
enhance_l7policy_enable	Boolean	<p>Specifies whether to enable advanced forwarding. The value can be true (enable advanced forwarding) or false (disable advanced forwarding), and the default value is false.</p> <ul style="list-style-type: none">• If this function is enabled, action can be set to REDIRECT_TO_URL (requests will be redirected to another URL) or Fixed_RESPONSE (a fixed response body will be returned to clients).• Parameters priority, redirect_url_config, and fixed_response_config can be specified in a forwarding policy.• Parameter type can be set to METHOD, HEADER, QUERY_STRING, or SOURCE_IP for a forwarding rule .• If type is set to HOST_NAME for a forwarding rule, the value parameter of the forwarding rule supports wildcard asterisks (*).• The conditions parameter can be specified for forwarding rules. <p>NOTE Value false can't be used after this parameter was set to true.</p> <p>Default: false</p>

Parameter	Type	Description
quic_config	ListenerQuic Config object	<p>Specifies the QUIC configuration for the current listener. This parameter is valid only when protocol is set to HTTPS.</p> <p>For a TCP/UDP/HTTP/QUIC listener, if this parameter is not left blank, an error will be reported.</p> <p>NOTE The client sends a normal HTTP request that contains information indicating that the QUIC protocol is supported.</p> <p>If QUIC upgrade is enabled for the listeners, QUIC port and version information will be added to the response header.</p> <p>When the client sends both HTTPS and QUIC requests to the server, if the QUIC request is successfully sent, QUIC protocol will be used for subsequent communications.</p> <p>QUIC protocol is not supported.</p>

Table 4-237 ListenerInsertHeaders

Parameter	Type	Description
X-Forwarded-ELB-IP	Boolean	Specifies whether to transparently transmit the load balancer EIP to backend servers. If X-Forwarded-ELB-IP is set to true , the load balancer EIP will be stored in the HTTP header and passed to backend servers.
X-Forwarded-Port	Boolean	Specifies whether to transparently transmit the listening port of the load balancer to backend servers. If X-Forwarded-Port is set to true , the listening port of the load balancer will be stored in the HTTP header and passed to backend servers.
X-Forwarded-For-Port	Boolean	Specifies whether to transparently transmit the source port of the client to backend servers. If X-Forwarded-For-Port is set to true , the source port of the client will be stored in the HTTP header and passed to backend servers.
X-Forwarded-Host	Boolean	Specifies whether to rewrite the X-Forwarded-Host header. If X-Forwarded-Host is set to true , X-Forwarded-Host in the request header from the clients can be set to Host in the request header sent from the load balancer to backend servers.

Parameter	Type	Description
X-Forwarded-Proto	Boolean	If X-Forwarded-Proto is set to true , the listener protocol of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Real-IP	Boolean	If X-Real-IP is set to true , the source IP address of the client can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-ELB-ID	Boolean	If X-Forwarded-ELB-ID is set to true , the load balancer ID can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-TLS-Certificate-ID	Boolean	If X-Forwarded-TLS-Certificate-ID is set to true , the certificate ID of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-TLS-Protocol	Boolean	If X-Forwarded-TLS-Protocol is set to true , the algorithm protocol of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-TLS-Cipher	Boolean	If X-Forwarded-TLS-Cipher is set to true , the algorithm suite of the load balancer can be transferred to backend servers through the HTTP header of the packet.

Table 4-238 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-239 Tag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: 1 Maximum: 36
value	String	Specifies the tag value. Minimum: 0 Maximum: 43

Table 4-240 ListenerIpGroup

Parameter	Type	Description
ipgroup_id	String	Specifies the ID of the IP address group associated with the listener. This parameter is mandatory when you create the IP address group and is optional when you update the IP address group. The specified IP address group must exist, and the value cannot be null .
enable_ipgroup	Boolean	Specifies whether to enable access control. <ul style="list-style-type: none">• true: Access control is enabled.• false: Access control is disabled. A listener with access control enabled can be directly deleted.
type	String	Specifies how access to the listener is controlled. <ul style="list-style-type: none">• white: A whitelist is configured. Only IP addresses in the whitelist can access the listener.• black: A blacklist is configured. IP addresses in the blacklist are not allowed to access the listener.

Table 4-241 ListenerQuicConfig

Parameter	Type	Description
quic_listener_id	String	Specifies the ID of the QUIC listener. This parameter is mandatory for creation and is optional for update. The specified quic_listener_id must exist. The listener protocol must be QUIC and cannot be set to null , otherwise, it will conflict with enable_quic_upgrade . QUIC protocol is not supported.
enable_quic_upgrade	Boolean	Specifies whether to enable QUIC upgrade. True : QUIC upgrade is enabled. False : QUIC upgrade is disabled. HTTPS listeners can be upgraded to QUIC listeners. QUIC protocol is not supported.

Example Requests

Queries 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-1-0",
    "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,
    "quic_config": null
  }, {
    "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",
    "sni_container_refs": [ "7f41c96223d34ebaa3c8e836b6625ec0" ],
    "connection_limit": -1,
    "default_pool_id": "5e7e0175-d5d5-4f37-bfba-88a9524ad20b",
    "tls_ciphers_policy": "tls-1-0",
    "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
} ],
"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"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.10.3 Viewing Details of a Listener

Function

This API is used to view details of a listener.

Calling Method

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

URI

GET /v3/{project_id}/elb/listeners/{listener_id}

Table 4-242 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
listener_id	Yes	String	Specifies the listener ID.

Request Parameters

Table 4-243 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-244 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
listener	Listener object	Specifies the listener.

Table 4-245 Listener

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the listener.
client_ca_tls_container_ref	String	Specifies the ID of the CA certificate used by the listener. This parameter is available only when type is set to client .
connection_limit	Integer	Specifies the maximum number of connections that the load balancer can establish with backend servers. The value -1 indicates that the number of connections is not limited. This parameter is unsupported. Please do not use it.
created_at	String	Specifies the time when the listener was created, 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	Specifies the ID of the default backend server group. If there is no matched forwarding policy, requests are forwarded to the default backend server.
default_tls_container_ref	String	Specifies the ID of the server certificate used by the listener.
description	String	Provides supplementary information about the listener.

Parameter	Type	Description
http2_enable	Boolean	Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the listener. However, connections between the load balancer and backend servers still use HTTP/1.x by default. Note the following: <ul style="list-style-type: none">This parameter is available only for HTTPS listeners.If you configure this parameter for listeners with other protocols, it will not take effect.
id	String	Specifies the listener ID.
insert_headers	ListenerInsertHeaders object	Specifies the HTTP header fields that can transmit required information to backend servers. For example, the X-Forwarded-ELB-IP header field can transmit the EIP of the load balancer to backend servers.
loadbalancers	Array of LoadBalancerRef objects	Specifies the ID of the load balancer that the listener is added to. A listener can be added to only one load balancer.
name	String	Specifies the listener name. Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details.
project_id	String	Specifies the ID of the project where the listener is used.
protocol	String	Specifies the protocol used by the listener. The value can be TCP , UDP , HTTP , HTTPS , or IP . IP is only available for listeners that will be added to gateway load balancers.
protocol_port	Integer	Specifies the port used by the listener. The QUIC listener port cannot be 4789 or the same as the UDP listener port. If this parameter is set to 0 , port_ranges is required. Minimum: 0 Maximum: 65535
sni_container_refs	Array of strings	Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener. Note: <ul style="list-style-type: none">The domain names of all SNI certificates must be unique.The total number of domain names of all SNI certificates cannot exceed 30.

Parameter	Type	Description
sni_match_algo	String	Specifies how wildcard domain name matches with the SNI certificates used by the listener. longest_suffix indicates longest suffix match. wildcard indicates wildcard match. The default value is wildcard .
tags	Array of Tag objects	Lists the tags.
updated_at	String	Specifies the time when the listener was updated, 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	Specifies the security policy used by the listener. Values: tls-1-0-inherit , tls-1-0 , tls-1-1 , tls-1-2-strict , and tls-1-0 (default). Note: <ul style="list-style-type: none">• This parameter will take effect only for HTTPS listeners.• If both security_policy_id and tls_ciphers_policy are specified, only security_policy_id will take effect.• The priority of the encryption suite from high to low is: ecc suite, rsa suite. TLS1.3 is unsupported.
security_policy_id	String	Specifies the ID of the custom security policy. Note: <ul style="list-style-type: none">• This parameter will take effect only for HTTPS listeners.• If both security_policy_id and tls_ciphers_policy are specified, only security_policy_id will take effect.• The priority of the encryption suite from high to low is: ecc suite, rsa suite. TLS1.3 is unsupported.
enable_member_retry	Boolean	Specifies whether to enable health check retries for backend servers. The value can be true (enable health check retries) or false (disable health check retries). The default value is true . Note: <ul style="list-style-type: none">• This parameter is available only when protocol is set to HTTP, or HTTPS.

Parameter	Type	Description
keepalive_timeout	Integer	<p>Specifies the idle timeout duration, in seconds. If there are no requests reaching the load balancer after the idle timeout duration elapses, the load balancer will disconnect the connection with the client and establish a new connection when there is a new request.</p> <ul style="list-style-type: none"> For TCP and IP listeners, the value ranges from 10 to 4000, and the default value is 300. <p>+For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0 to 4000, and the default value is 60.</p> <ul style="list-style-type: none"> For UDP listeners of shared load balancers, this parameter does not take effect.
client_timeout	Integer	<p>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"> If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted. If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected. <p>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p>
member_timeout	Integer	<p>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>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p>
ipgroup	ListenerIpGroup object	Specifies the IP address group associated with the listener.
transparent_client_ip_enable	Boolean	<p>Specifies whether to pass source IP addresses of the clients to backend servers.</p> <p>For all listeners, the default value is true if this parameter is not passed.</p>

Parameter	Type	Description
proxy_protocol_enable	Boolean	Specifies whether to enable the ProxyProtocol option 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.
enhance_l7policy_enable	Boolean	<p>Specifies whether to enable advanced forwarding. The value can be true (enable advanced forwarding) or false (disable advanced forwarding), and the default value is false.</p> <ul style="list-style-type: none"> • If this function is enabled, action can be set to REDIRECT_TO_URL (requests will be redirected to another URL) or Fixed_RESPONSE (a fixed response body will be returned to clients). • Parameters priority, redirect_url_config, and fixed_response_config can be specified in a forwarding policy. • Parameter type can be set to METHOD, HEADER, QUERY_STRING, or SOURCE_IP for a forwarding rule . • If type is set to HOST_NAME for a forwarding rule, the value parameter of the forwarding rule supports wildcard asterisks (*). • The conditions parameter can be specified for forwarding rules. <p>NOTE Value false can't be used after this parameter was set to true.</p> <p>Default: false</p>

Parameter	Type	Description
quic_config	ListenerQuic Config object	<p>Specifies the QUIC configuration for the current listener. This parameter is valid only when protocol is set to HTTPS.</p> <p>For a TCP/UDP/HTTP/QUIC listener, if this parameter is not left blank, an error will be reported.</p> <p>NOTE The client sends a normal HTTP request that contains information indicating that the QUIC protocol is supported.</p> <p>If QUIC upgrade is enabled for the listeners, QUIC port and version information will be added to the response header.</p> <p>When the client sends both HTTPS and QUIC requests to the server, if the QUIC request is successfully sent, QUIC protocol will be used for subsequent communications.</p> <p>QUIC protocol is not supported.</p>

Table 4-246 ListenerInsertHeaders

Parameter	Type	Description
X-Forwarded-ELB-IP	Boolean	Specifies whether to transparently transmit the load balancer EIP to backend servers. If X-Forwarded-ELB-IP is set to true , the load balancer EIP will be stored in the HTTP header and passed to backend servers.
X-Forwarded-Port	Boolean	Specifies whether to transparently transmit the listening port of the load balancer to backend servers. If X-Forwarded-Port is set to true , the listening port of the load balancer will be stored in the HTTP header and passed to backend servers.
X-Forwarded-For-Port	Boolean	Specifies whether to transparently transmit the source port of the client to backend servers. If X-Forwarded-For-Port is set to true , the source port of the client will be stored in the HTTP header and passed to backend servers.
X-Forwarded-Host	Boolean	Specifies whether to rewrite the X-Forwarded-Host header. If X-Forwarded-Host is set to true , X-Forwarded-Host in the request header from the clients can be set to Host in the request header sent from the load balancer to backend servers.

Parameter	Type	Description
X-Forwarded-Proto	Boolean	If X-Forwarded-Proto is set to true , the listener protocol of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Real-IP	Boolean	If X-Real-IP is set to true , the source IP address of the client can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-ELB-ID	Boolean	If X-Forwarded-ELB-ID is set to true , the load balancer ID can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-TLS-Certificate-ID	Boolean	If X-Forwarded-TLS-Certificate-ID is set to true , the certificate ID of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-TLS-Protocol	Boolean	If X-Forwarded-TLS-Protocol is set to true , the algorithm protocol of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-TLS-Cipher	Boolean	If X-Forwarded-TLS-Cipher is set to true , the algorithm suite of the load balancer can be transferred to backend servers through the HTTP header of the packet.

Table 4-247 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-248 Tag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: 1 Maximum: 36
value	String	Specifies the tag value. Minimum: 0 Maximum: 43

Table 4-249 ListenerIpGroup

Parameter	Type	Description
ipgroup_id	String	Specifies the ID of the IP address group associated with the listener. This parameter is mandatory when you create the IP address group and is optional when you update the IP address group. The specified IP address group must exist, and the value cannot be null .
enable_ipgroup	Boolean	Specifies whether to enable access control. <ul style="list-style-type: none">• true: Access control is enabled.• false: Access control is disabled. A listener with access control enabled can be directly deleted.
type	String	Specifies how access to the listener is controlled. <ul style="list-style-type: none">• white: A whitelist is configured. Only IP addresses in the whitelist can access the listener.• black: A blacklist is configured. IP addresses in the blacklist are not allowed to access the listener.

Table 4-250 ListenerQuicConfig

Parameter	Type	Description
quic_listener_id	String	Specifies the ID of the QUIC listener. This parameter is mandatory for creation and is optional for update. The specified quic_listener_id must exist. The listener protocol must be QUIC and cannot be set to null , otherwise, it will conflict with enable_quic_upgrade . QUIC protocol is not supported.
enable_quic_upgrade	Boolean	Specifies whether to enable QUIC upgrade. True : QUIC upgrade is enabled. False : QUIC upgrade is disabled. HTTPS listeners can be upgraded to QUIC listeners. QUIC protocol is not supported.

Example Requests

Viewing 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
  },
  "request_id" : "1394eb39-e4c8-4177-b96d-aaff569f1833"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.10.4 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 4-251 Path Parameters

Parameter	Mandatory	Type	Description
listener_id	Yes	String	Specifies the listener ID.
project_id	Yes	String	Specifies the tenant ID.

Request Parameters

Table 4-252 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-253 Request body parameters

Parameter	Mandatory	Type	Description
listener	Yes	UpdateListenerOption object	Request body for updating a listener

Table 4-254 UpdateListenerOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the listener. The value can only be true .

Parameter	Mandatory	Type	Description
client_ca_tls_container_ref	No	String	Specifies the ID of the CA certificate used by the listener. This parameter is available only when type is set to client .
default_pool_id	No	String	Specifies the ID of the default backend server group. If there is no matched forwarding policy, requests are forwarded to the default backend server. Minimum: 1 Maximum: 36
default_tls_container_ref	No	String	Specifies the ID of the server certificate used by the listener. This parameter is available only when the listener's protocol is HTTPS and type is set to server .
description	No	String	Provides supplementary information about the listener. Minimum: 0 Maximum: 255
http2_enable	No	Boolean	Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the listener. However, connections between the load balancer and backend servers still use HTTP/1.x by default. This parameter is available only for HTTPS listeners. If you configure this parameter for listeners with other protocols, it will not take effect.
insert_headers	No	ListenerInsertHeaders object	Specifies the HTTP header fields that can transmit required information to backend servers. For example, the X-Forwarded-ELB-IP header field can transmit the EIP of the load balancer to backend servers.

Parameter	Mandatory	Type	Description
name	No	String	Specifies the listener name. Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details. Minimum: 0 Maximum: 255
sni_container_refs	No	Array of strings	Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener. Note: <ul style="list-style-type: none"> • The domain names of all SNI certificates must be unique. • The total number of domain names of all SNI certificates cannot exceed 30.
sni_match_algo	No	String	Specifies how wildcard domain name matches with the SNI certificates used by the listener. longest_suffix indicates longest suffix match. wildcard indicates wildcard match. The default value is wildcard .

Parameter	Mandatory	Type	Description
tls_ciphers_policy	No	String	<p>Specifies the security policy used by the listener.</p> <p>Values: tls-1-0-inherit, tls-1-0, tls-1-1, tls-1-2-strict, and tls-1-0 (default).</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter will take effect only for HTTPS listeners. • If both security_policy_id and tls_ciphers_policy are specified, only security_policy_id will take effect. • The priority of the encryption suite from high to low is: ecc suite, rsa suite. <p>TLS1.3 is unsupported.</p>
security_policy_id	No	String	<p>Specifies the ID of the custom security policy.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter will take effect only for HTTPS listeners. • If both security_policy_id and tls_ciphers_policy are specified, only security_policy_id will take effect. • The priority of the encryption suite from high to low is: ecc suite, rsa suite. <p>TLS1.3 is unsupported.</p> <p>Minimum: 1</p> <p>Maximum: 36</p>

Parameter	Mandatory	Type	Description
enable_member_retry	No	Boolean	<p>Specifies whether to enable health check retries for backend servers. The value can be true (enable health check retries) or false (disable health check retries). The default value is true.</p> <p>Note:</p> <ul style="list-style-type: none">This parameter is available only when protocol is set to HTTP, or HTTPS.
member_timeout	No	Integer	<p>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>The value ranges from 1 to 300.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p> <p>Minimum: 1 Maximum: 300</p>
client_timeout	No	Integer	<p>Specifies the timeout duration for waiting for a response from a client, in seconds.</p> <p>This parameter is available only for HTTP and HTTPS listeners. The value ranges from 1 to 300.</p> <p>Minimum: 1 Maximum: 300</p>

Parameter	Mandatory	Type	Description
keepalive_timeout	No	Integer	<p>Specifies the idle timeout duration, in seconds. If there are no requests reaching the load balancer after the idle timeout duration elapses, the load balancer will disconnect the connection with the client and establish a new connection when there is a new request.</p> <ul style="list-style-type: none"> For TCP and IP listeners, the value ranges from 10 to 4000, and the default value is 300. <p>+For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0 to 4000, and the default value is 60.</p> <ul style="list-style-type: none"> For UDP listeners of shared load balancers, this parameter does not take effect.
ipgroup	No	UpdateListenerIpGroupOption object	Specifies the IP address group associated with the listener.
transparent_client_ip_enable	No	Boolean	<p>Specifies whether to pass source IP addresses of the clients to backend servers.</p> <p>For all listeners, the default value is true if this parameter is not passed.</p>
proxy_protocol_enable	No	Boolean	<p>Specifies whether to enable the ProxyProtocol option 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>

Parameter	Mandatory	Type	Description
enhance_l7policy_enable	No	Boolean	<p>Specifies whether to enable advanced forwarding. The value can be true (enable advanced forwarding) or false (disable advanced forwarding), and the default value is false.</p> <ul style="list-style-type: none"> • If this function is enabled, action can be set to REDIRECT_TO_URL (requests will be redirected to another URL) or Fixed_RESPONSE (a fixed response body will be returned to clients). • Parameters priority, redirect_url_config, and fixed_response_config can be specified in a forwarding policy. • Parameter type can be set to METHOD, HEADER, QUERY_STRING, or SOURCE_IP for a forwarding rule . • If type is set to HOST_NAME for a forwarding rule, the value parameter of the forwarding rule supports wildcard asterisks (*). • The conditions parameter can be specified for forwarding rules. <p>NOTE Value false can't be used after this parameter was set to true.</p>

Parameter	Mandatory	Type	Description
quic_config	No	UpdateListenerQuicConfigOption object	<p>Specifies the QUIC configuration for the current listener. This parameter is valid only when protocol is set to HTTPS.</p> <p>For a TCP/UDP/HTTP/QUIC listener, if this parameter is not left blank, an error will be reported.</p> <p>NOTE The client sends a normal HTTP request that contains information indicating that the QUIC protocol is supported.</p> <p>If QUIC upgrade is enabled for the listeners, QUIC port and version information will be added to the response header.</p> <p>When the client sends both HTTPS and QUIC requests to the server, if the QUIC request is successfully sent, QUIC protocol will be used for subsequent communications.</p> <p>QUIC protocol is not supported.</p>

Table 4-255 ListenerInsertHeaders

Parameter	Mandatory	Type	Description
X-Forwarded-ELB-IP	No	Boolean	<p>Specifies whether to transparently transmit the load balancer EIP to backend servers. If X-Forwarded-ELB-IP is set to true, the load balancer EIP will be stored in the HTTP header and passed to backend servers.</p>

Parameter	Mandatory	Type	Description
X-Forwarded-Port	No	Boolean	Specifies whether to transparently transmit the listening port of the load balancer to backend servers. If X-Forwarded-Port is set to true , the listening port of the load balancer will be stored in the HTTP header and passed to backend servers.
X-Forwarded-For-Port	No	Boolean	Specifies whether to transparently transmit the source port of the client to backend servers. If X-Forwarded-For-Port is set to true , the source port of the client will be stored in the HTTP header and passed to backend servers.
X-Forwarded-Host	No	Boolean	Specifies whether to rewrite the X-Forwarded-Host header. If X-Forwarded-Host is set to true , X-Forwarded-Host in the request header from the clients can be set to Host in the request header sent from the load balancer to backend servers.
X-Forwarded-Proto	No	Boolean	If X-Forwarded-Proto is set to true , the listener protocol of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Real-IP	No	Boolean	If X-Real-IP is set to true , the source IP address of the client can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-ELB-ID	No	Boolean	If X-Forwarded-ELB-ID is set to true , the load balancer ID can be transferred to backend servers through the HTTP header of the packet.

Parameter	Mandatory	Type	Description
X-Forwarded-TLS-Certificate-ID	No	Boolean	If X-Forwarded-TLS-Certificate-ID is set to true , the certificate ID of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-TLS-Protocol	No	Boolean	If X-Forwarded-TLS-Protocol is set to true , the algorithm protocol of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-TLS-Cipher	No	Boolean	If X-Forwarded-TLS-Cipher is set to true , the algorithm suite of the load balancer can be transferred to backend servers through the HTTP header of the packet.

Table 4-256 UpdateListenerIpGroupOption

Parameter	Mandatory	Type	Description
ipgroup_id	No	String	Specifies the ID of the IP address group associated with the listener. This parameter is mandatory when you create the IP address group and is optional when you update the IP address group. The specified IP address group must exist, and the value cannot be null . Minimum: 1 Maximum: 3600
enable_ipgroup	No	Boolean	Specifies whether access control is enabled. <ul style="list-style-type: none"> • true: Access control is enabled. • false: Access control is disabled. A listener with access control enabled can be directly deleted.

Parameter	Mandatory	Type	Description
type	No	String	Specifies how access to the listener is controlled. <ul style="list-style-type: none">• white: A whitelist is configured. Only IP addresses in the whitelist can access the listener.• black: A blacklist is configured. IP addresses in the blacklist are not allowed to access the listener.

Table 4-257 UpdateListenerQuicConfigOption

Parameter	Mandatory	Type	Description
quic_listener_id	No	String	Specifies the ID of the QUIC listener. Specifies the specified listener. The specified quic_listener_id must exist. The listener protocol must be QUIC and cannot be set to null , otherwise, it will conflict with enable_quic_upgrade . QUIC protocol is not supported.
enable_quic_upgrade	No	Boolean	Specifies whether to enable QUIC upgrade. True : QUIC upgrade is enabled. False : QUIC upgrade is disabled. HTTPS listeners can be upgraded to QUIC listeners. QUIC protocol is not supported.

Response Parameters

Status code: 200

Table 4-258 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.

Parameter	Type	Description
listener	Listener object	Response body for adding a listener

Table 4-259 Listener

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the listener.
client_ca_tls_container_ref	String	Specifies the ID of the CA certificate used by the listener. This parameter is available only when type is set to client .
connection_limit	Integer	Specifies the maximum number of connections that the load balancer can establish with backend servers. The value -1 indicates that the number of connections is not limited. This parameter is unsupported. Please do not use it.
created_at	String	Specifies the time when the listener was created, 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	Specifies the ID of the default backend server group. If there is no matched forwarding policy, requests are forwarded to the default backend server.
default_tls_container_ref	String	Specifies the ID of the server certificate used by the listener.
description	String	Provides supplementary information about the listener.
http2_enable	Boolean	Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the listener. However, connections between the load balancer and backend servers still use HTTP/1.x by default. Note the following: <ul style="list-style-type: none">• This parameter is available only for HTTPS listeners.• If you configure this parameter for listeners with other protocols, it will not take effect.
id	String	Specifies the listener ID.

Parameter	Type	Description
insert_headers	ListenerInsertHeaders object	Specifies the HTTP header fields that can transmit required information to backend servers. For example, the X-Forwarded-ELB-IP header field can transmit the EIP of the load balancer to backend servers.
loadbalancers	Array of LoadBalancerRef objects	Specifies the ID of the load balancer that the listener is added to. A listener can be added to only one load balancer.
name	String	Specifies the listener name. Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details.
project_id	String	Specifies the ID of the project where the listener is used.
protocol	String	Specifies the protocol used by the listener. The value can be TCP , UDP , HTTP , HTTPS , or IP . IP is only available for listeners that will be added to gateway load balancers.
protocol_port	Integer	Specifies the port used by the listener. The QUIC listener port cannot be 4789 or the same as the UDP listener port. If this parameter is set to 0 , port_ranges is required. Minimum: 0 Maximum: 65535
sni_container_refs	Array of strings	Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener. Note: <ul style="list-style-type: none"> The domain names of all SNI certificates must be unique. The total number of domain names of all SNI certificates cannot exceed 30.
sni_match_algo	String	Specifies how wildcard domain name matches with the SNI certificates used by the listener. longest_suffix indicates longest suffix match. wildcard indicates wildcard match. The default value is wildcard .
tags	Array of Tag objects	Lists the tags.
updated_at	String	Specifies the time when the listener was updated, 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	<p>Specifies the security policy used by the listener.</p> <p>Values: tls-1-0-inherit, tls-1-0, tls-1-1, tls-1-2-strict, and tls-1-0 (default).</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter will take effect only for HTTPS listeners. • If both security_policy_id and tls_ciphers_policy are specified, only security_policy_id will take effect. • The priority of the encryption suite from high to low is: ecc suite, rsa suite. <p>TLS1.3 is unsupported.</p>
security_policy_id	String	<p>Specifies the ID of the custom security policy.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter will take effect only for HTTPS listeners. • If both security_policy_id and tls_ciphers_policy are specified, only security_policy_id will take effect. • The priority of the encryption suite from high to low is: ecc suite, rsa suite. <p>TLS1.3 is unsupported.</p>
enable_member_retry	Boolean	<p>Specifies whether to enable health check retries for backend servers. The value can be true (enable health check retries) or false (disable health check retries). The default value is true.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter is available only when protocol is set to HTTP, or HTTPS.

Parameter	Type	Description
keepalive_timeout	Integer	<p>Specifies the idle timeout duration, in seconds. If there are no requests reaching the load balancer after the idle timeout duration elapses, the load balancer will disconnect the connection with the client and establish a new connection when there is a new request.</p> <ul style="list-style-type: none"> For TCP and IP listeners, the value ranges from 10 to 4000, and the default value is 300. <p>+For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0 to 4000, and the default value is 60.</p> <ul style="list-style-type: none"> For UDP listeners of shared load balancers, this parameter does not take effect.
client_timeout	Integer	<p>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"> If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted. If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected. <p>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p>
member_timeout	Integer	<p>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>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p>
ipgroup	ListenerIpGroup object	Specifies the IP address group associated with the listener.
transparent_client_ip_enable	Boolean	<p>Specifies whether to pass source IP addresses of the clients to backend servers.</p> <p>For all listeners, the default value is true if this parameter is not passed.</p>

Parameter	Type	Description
proxy_protocol_enable	Boolean	Specifies whether to enable the ProxyProtocol option 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.
enhance_l7policy_enable	Boolean	<p>Specifies whether to enable advanced forwarding. The value can be true (enable advanced forwarding) or false (disable advanced forwarding), and the default value is false.</p> <ul style="list-style-type: none"> • If this function is enabled, action can be set to REDIRECT_TO_URL (requests will be redirected to another URL) or Fixed_RESPONSE (a fixed response body will be returned to clients). • Parameters priority, redirect_url_config, and fixed_response_config can be specified in a forwarding policy. • Parameter type can be set to METHOD, HEADER, QUERY_STRING, or SOURCE_IP for a forwarding rule . • If type is set to HOST_NAME for a forwarding rule, the value parameter of the forwarding rule supports wildcard asterisks (*). • The conditions parameter can be specified for forwarding rules. <p>NOTE Value false can't be used after this parameter was set to true.</p> <p>Default: false</p>

Parameter	Type	Description
quic_config	ListenerQuic Config object	<p>Specifies the QUIC configuration for the current listener. This parameter is valid only when protocol is set to HTTPS.</p> <p>For a TCP/UDP/HTTP/QUIC listener, if this parameter is not left blank, an error will be reported.</p> <p>NOTE The client sends a normal HTTP request that contains information indicating that the QUIC protocol is supported.</p> <p>If QUIC upgrade is enabled for the listeners, QUIC port and version information will be added to the response header.</p> <p>When the client sends both HTTPS and QUIC requests to the server, if the QUIC request is successfully sent, QUIC protocol will be used for subsequent communications.</p> <p>QUIC protocol is not supported.</p>

Table 4-260 ListenerInsertHeaders

Parameter	Type	Description
X-Forwarded-ELB-IP	Boolean	Specifies whether to transparently transmit the load balancer EIP to backend servers. If X-Forwarded-ELB-IP is set to true , the load balancer EIP will be stored in the HTTP header and passed to backend servers.
X-Forwarded-Port	Boolean	Specifies whether to transparently transmit the listening port of the load balancer to backend servers. If X-Forwarded-Port is set to true , the listening port of the load balancer will be stored in the HTTP header and passed to backend servers.
X-Forwarded-For-Port	Boolean	Specifies whether to transparently transmit the source port of the client to backend servers. If X-Forwarded-For-Port is set to true , the source port of the client will be stored in the HTTP header and passed to backend servers.
X-Forwarded-Host	Boolean	Specifies whether to rewrite the X-Forwarded-Host header. If X-Forwarded-Host is set to true , X-Forwarded-Host in the request header from the clients can be set to Host in the request header sent from the load balancer to backend servers.

Parameter	Type	Description
X-Forwarded-Proto	Boolean	If X-Forwarded-Proto is set to true , the listener protocol of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Real-IP	Boolean	If X-Real-IP is set to true , the source IP address of the client can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-ELB-ID	Boolean	If X-Forwarded-ELB-ID is set to true , the load balancer ID can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-TLS-Certificate-ID	Boolean	If X-Forwarded-TLS-Certificate-ID is set to true , the certificate ID of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-TLS-Protocol	Boolean	If X-Forwarded-TLS-Protocol is set to true , the algorithm protocol of the load balancer can be transferred to backend servers through the HTTP header of the packet.
X-Forwarded-TLS-Cipher	Boolean	If X-Forwarded-TLS-Cipher is set to true , the algorithm suite of the load balancer can be transferred to backend servers through the HTTP header of the packet.

Table 4-261 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-262 Tag

Parameter	Type	Description
key	String	Specifies the tag key. Minimum: 1 Maximum: 36
value	String	Specifies the tag value. Minimum: 0 Maximum: 43

Table 4-263 ListenerIpGroup

Parameter	Type	Description
ipgroup_id	String	Specifies the ID of the IP address group associated with the listener. This parameter is mandatory when you create the IP address group and is optional when you update the IP address group. The specified IP address group must exist, and the value cannot be null .
enable_ipgroup	Boolean	Specifies whether to enable access control. <ul style="list-style-type: none">• true: Access control is enabled.• false: Access control is disabled. A listener with access control enabled can be directly deleted.
type	String	Specifies how access to the listener is controlled. <ul style="list-style-type: none">• white: A whitelist is configured. Only IP addresses in the whitelist can access the listener.• black: A blacklist is configured. IP addresses in the blacklist are not allowed to access the listener.

Table 4-264 ListenerQuicConfig

Parameter	Type	Description
quic_listener_id	String	Specifies the ID of the QUIC listener. This parameter is mandatory for creation and is optional for update. The specified quic_listener_id must exist. The listener protocol must be QUIC and cannot be set to null , otherwise, it will conflict with enable_quic_upgrade . QUIC protocol is not supported.
enable_quic_upgrade	Boolean	Specifies whether to enable QUIC upgrade. True : QUIC upgrade is enabled. False : QUIC upgrade is disabled. HTTPS listeners can be upgraded to QUIC listeners. QUIC protocol is not supported.

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-1-0",
    "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
  },
  "request_id" : "5d56d89a-2271-4a75-8c02-804e3bc7b671"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.10.5 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 4-265 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
listener_id	Yes	String	Specifies the listener ID.

Request Parameters

Table 4-266 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

None

Example Requests

Deleting a listener

```
DELETE https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/listeners/0b11747a-b139-492f-9692-2df0b1c87193
```

Example Responses

None

Status Codes

Status Code	Description
204	Successful request.

Error Codes

See [Error Codes](#).

4.11 Backend Server Group

4.11.1 Creating a Backend Server Group

Function

This API is used to create a backend server group.

Constraints

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 4-267 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-268 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-269 Request body parameters

Parameter	Mandatory	Type	Description
pool	Yes	CreatePoolOption object	Specifies the request body for creating a backend server group.

Table 4-270 CreatePoolOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the backend server group. The value can only be updated to true .
description	No	String	Provides supplementary information about the backend server group. Minimum: 0 Maximum: 255

Parameter	Mandatory	Type	Description
lb_algorithm	Yes	String	<p>Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"> ● ROUND_ROBIN: weighted round robin ● LEAST_CONNECTIONS: weighted least connections ● SOURCE_IP: source IP hash ● QUIC_CID: connection ID ● 2_TUPLE_HASH: 2-tuple hash that is only available for IP backend server groups ● 3_TUPLE_HASH: 3-tuple hash that is only available for IP backend server groups ● 4_TUPLE_HASH: 4-tuple hash that is only available for IP backend server groups <p>Note:</p> <ul style="list-style-type: none"> ● If the value is SOURCE_IP, the weight parameter will not take effect for backend servers. ● QUIC_CID is supported only when the protocol of the backend server group is QUIC. <p>QUIC_CID is not supported.</p>
listener_id	No	String	<p>Specifies the ID of the listener with which the backend server group is associated. Specify either listener_id or loadbalancer_id, or both of them.</p> <p>Minimum: 1 Maximum: 36</p>

Parameter	Mandatory	Type	Description
loadbalancer_id	No	String	Specifies the ID of the load balancer with which the backend server group is associated. Minimum: 1 Maximum: 36
name	No	String	Specifies the backend server group name. Minimum: 0 Maximum: 255
project_id	No	String	Specifies the project ID of the backend server group. Minimum: 1 Maximum: 32

Parameter	Mandatory	Type	Description
protocol	Yes	String	<p>Specifies the protocol used by the backend server group to receive requests.</p> <p>The value can be TCP, UDP, IP, TLS, HTTP, HTTPS, gRPC, or QUIC.</p> <p>Note:</p> <ul style="list-style-type: none"> • If the listener's protocol is UDP, the protocol of the backend server group must be UDP or QUIC. • If the listener's protocol is TCP, the protocol of the backend server group must be TCP. • If the listener's protocol is IP, the protocol of the backend server group must be IP. • If the listener's protocol is HTTP, the protocol of the backend server group must be HTTP. • If the listener's protocol is HTTPS, the protocol of the backend server group can be HTTP, HTTPS, or gRPC. • If the listener's protocol is TERMINATED_HTTPS, the protocol of the backend server group must be HTTP. • If the listener's protocol is QUIC, the protocol of the backend server group can be HTTP, HTTPS, or gRPC. • If the listener's protocol is TLS, the protocol of the backend server group can be TLS or TCP. If protocol of the backend server group is TCP, the ip_version must be set to v4. <p>Note:</p> <ul style="list-style-type: none"> • If protocol of the backend server group is QUIC,

Parameter	Mandatory	Type	Description
			<p>session_persistence must be set to true, with type set to SOURCE_IP.</p> <ul style="list-style-type: none"> If protocol of the backend server group is gRPC, http2_enable of the listener must be set to true. QUIC is not supported. <p>Minimum: 1 Maximum: 255</p>
session_persistence	No	CreatePoolSessionPersistenceOption object	Specifies the sticky session.
slow_start	No	CreatePoolSlowStartOption object	<p>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.</p> <p>This parameter can be used when the protocol of the backend server group is HTTP or HTTPS. An error will be returned if the protocol is not HTTP or HTTPS.</p>
member_deletion_protection_enable	No	Boolean	<p>Specifies whether to enable removal protection for the load balancer.</p> <ul style="list-style-type: none"> true: Enable removal protection. false (default): Disable removal protection. <p>NOTE Disable removal protection for all your resources before deleting your account.</p> <p>This parameter is unsupported. Please do not use it.</p>

Parameter	Mandatory	Type	Description
vpc_id	No	String	<p>Specifies the ID of the VPC where the backend server group works.</p> <p>Note:</p> <ul style="list-style-type: none"> • The backend server group must be associated with the VPC. • Only backend servers in the VPC or IP as backend servers can be added. • type must be set to instance. <p>If vpc_id is not specified: vpc_id is determined by the VPC where the backend server works.</p> <p>Minimum: 0 Maximum: 36</p>
type	No	String	<p>Specifies the type of the backend server group.</p> <p>Values:</p> <ul style="list-style-type: none"> • instance: Any type of backend servers can be added. vpc_id is mandatory. • ip: Only IP as backend servers can be added. vpc_id cannot be specified. • "": Any type of backend servers can be added. <p>Note:</p> <ul style="list-style-type: none"> • If this parameter is not passed, any type of backend servers can be added. type will be returned as an empty string. • Specify one of listener_id, loadbalancer_id, or type. <p>Minimum: 0 Maximum: 36</p>

Parameter	Mandatory	Type	Description
ip_version	No	String	Specifies the IP address version supported by the backend server group. Minimum: 1 Maximum: 20
target_rebalance	No	Boolean	Specifies whether to enable target_rebalance . If this option is enabled, traffic is redirected to a new backend server if a backend server goes offline or is removed. Note: <ul style="list-style-type: none"> This parameter is supported only by IP backend server groups. The default value is false. Default: false

Table 4-271 CreatePoolSessionPersistenceOption

Parameter	Mandatory	Type	Description
cookie_name	No	String	Specifies the cookie name. The name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). Note: This parameter will take effect only when type is set to APP_COOKIE . Otherwise, an error will be returned. This parameter is unsupported. Please do not use it.

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Specifies the sticky session type. The value can be SOURCE_IP, HTTP_COOKIE, or APP_COOKIE.</p> <p>Note:</p> <ul style="list-style-type: none"> • If the protocol of the backend server group is TCP or UDP, only SOURCE_IP takes effect. • If the protocol of the backend server group is HTTP or HTTPS, the value can only be HTTP_COOKIE.
persistence_timeout	No	Integer	<p>Specifies the stickiness duration, in minutes. This parameter will not take effect when type is set to APP_COOKIE.</p> <ul style="list-style-type: none"> • If the protocol of the backend server group is TCP, UDP, or QUIC, the value ranges from 1 to 60, and the default value is 1. • If the protocol of the backend server group is HTTP or HTTPS, the value ranges from 1 to 1440, and the default value is 1440. <p>QUIC protocol is not supported.</p>

Table 4-272 CreatePoolSlowStartOption

Parameter	Mandatory	Type	Description
enable	No	Boolean	<p>Specifies whether to enable slow start.</p> <ul style="list-style-type: none"> • true: Enable slow start. • false: Disable slow start. <p>Default: false</p>

Parameter	Mandatory	Type	Description
duration	No	Integer	Specifies the slow start duration, in seconds. The value ranges from 30 to 1200 , and the default value is 30 . Minimum: 30 Maximum: 1200 Default: 30

Response Parameters

Status code: 201

Table 4-273 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
pool	Pool object	Specifies the backend server group.

Table 4-274 Pool

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the backend server group.
description	String	Provides supplementary information about the backend server group.
healthmonitor_id	String	Specifies the ID of the health check configured for the backend server group.
id	String	Specifies the backend server group ID.

Parameter	Type	Description
lb_algorithm	String	<p>Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none">● ROUND_ROBIN: weighted round robin● LEAST_CONNECTIONS: weighted least connections● SOURCE_IP: source IP hash● QUIC_CID: connection ID● 2_TUPLE_HASH: 2-tuple hash that is only available for IP backend server groups● 3_TUPLE_HASH: 3-tuple hash that is only available for IP backend server groups● 4_TUPLE_HASH: 4-tuple hash that is only available for IP backend server groups Note:● If the value is SOURCE_IP, the weight parameter will not take effect for backend servers.● QUIC_CID is supported only when the protocol of the backend server group is QUIC. <p>QUIC_CID is not supported.</p>
listeners	Array of ListenerRef objects	Specifies the IDs of the listeners with which the backend server group is associated.
loadbalancers	Array of LoadBalancerRef objects	Specifies the IDs of the load balancers with which the backend server group is associated.
members	Array of MemberRef objects	Specifies the IDs of the backend servers in the backend server group.
name	String	Specifies the backend server group name.
project_id	String	Specifies the project ID.

Parameter	Type	Description
protocol	String	<p>Specifies the protocol used by the backend server group to receive requests.</p> <p>The value can be TCP, UDP, IP, TLS, HTTP, HTTPS, gRPC, or QUIC.</p> <p>Note:</p> <ul style="list-style-type: none">• If the listener's protocol is UDP, the protocol of the backend server group must be UDP or QUIC.• If the listener's protocol is TCP, the protocol of the backend server group must be TCP.• If the listener's protocol is IP, the protocol of the backend server group must be IP.• If the listener's protocol is HTTP, the protocol of the backend server group must be HTTP.• If the listener's protocol is HTTPS, the protocol of the backend server group can be HTTP, HTTPS, or gRPC.• If the listener's protocol is TERMINATED_HTTPS, the protocol of the backend server group must be HTTP.• If the listener's protocol is QUIC, the protocol of the backend server group can be HTTP, HTTPS, or gRPC.• If the listener's protocol is TLS, the protocol of the backend server group can be TLS or TCP. If protocol of the backend server group is TCP, the ip_version must be set to v4. <p>Note:</p> <ul style="list-style-type: none">• If protocol of the backend server group is QUIC, session_persistence must be set to true, with type set to SOURCE_IP.• If protocol of the backend server group is gRPC, http2_enable of the listener must be set to true. QUIC is not supported.
session_persistence	SessionPersistence object	Specifies the sticky session.
ip_version	String	Specifies the IP address version supported by the backend server group.

Parameter	Type	Description
slow_start	SlowStart object	<p>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.</p> <p>This parameter can be used when the protocol of the backend server group is HTTP or HTTPS. An error will be returned if the protocol is not HTTP or HTTPS.</p>
member_deletion_protection_enable	Boolean	<p>Specifies whether to enable removal protection.</p> <ul style="list-style-type: none">● true: Enable removal protection.● false: Disable removal protection. <p>NOTE Disable removal protection for all your resources before deleting your account.</p> <p>This parameter is unsupported. Please do not use it.</p>
created_at	String	Specifies the time when a backend server group was created. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
updated_at	String	Specifies the time when when a backend server group was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
vpc_id	String	Specifies the ID of the VPC where the backend server group works.
type	String	<p>Specifies the type of the backend server group.</p> <p>Values:</p> <ul style="list-style-type: none">● instance: Any type of backend servers can be added. vpc_id is mandatory.● ip: Only IP as backend servers can be added. vpc_id cannot be specified.● "": Any type of backend servers can be added.
enterprise_project_id	String	Specifies the enterprise project ID of the IP address group.

Table 4-275 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-276 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-277 MemberRef

Parameter	Type	Description
id	String	Specifies the backend server ID.

Table 4-278 SessionPersistence

Parameter	Type	Description
cookie_name	String	<p>Specifies the cookie name.</p> <p>The name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</p> <p>Note:</p> <p>This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned.</p> <p>This parameter is unsupported. Please do not use it.</p>
type	String	<p>Specifies the sticky session type. The value can be SOURCE_IP, HTTP_COOKIE, or APP_COOKIE.</p> <p>Note:</p> <ul style="list-style-type: none">• If the protocol of the backend server group is TCP or UDP, only SOURCE_IP takes effect.• If the protocol of the backend server group is HTTP or HTTPS, the value can only be HTTP_COOKIE.

Parameter	Type	Description
persistence_timeout	Integer	<p>Specifies the stickiness duration, in minutes. This parameter will not take effect when type is set to APP_COOKIE.</p> <ul style="list-style-type: none"> If the protocol of the backend server group is TCP, UDP, or QUIC, the value ranges from 1 to 60, and the default value is 1. If the protocol of the backend server group is HTTP or HTTPS, the value ranges from 1 to 1440, and the default value is 1440. <p>QUIC protocol is not supported.</p>

Table 4-279 SlowStart

Parameter	Type	Description
enable	Boolean	<p>Specifies whether to enable slow start.</p> <ul style="list-style-type: none"> true: Enable slow start. false: Disable slow start. <p>Default: false</p>
duration	Integer	<p>Specifies the slow start duration, in seconds. The value ranges from 30 to 1200, and the default value is 30.</p> <p>Minimum: 30 Maximum: 1200 Default: 30</p>

Example Requests

- Creating a backend server group whose backend protocol is 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": "TCP",
    "member_deletion_protection_enable": false
  }
}
```

- Creating a backend server group whose backend protocol is 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" : "HTTP",
"slow_start" : {
  "enable" : true,
  "duration" : 50
},
"member_deletion_protection_enable" : false
}
```

- Creating an IP backend server group for a gateway load balancer

POST https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools

```
{
  "pool" : {
    "name" : "My IP pool",
    "lb_algorithm" : "2_tuple_hash",
    "listener_id" : "0b11747a-b139-492f-9692-2df0b1c87193",
    "protocol" : "IP",
    "type" : "instance",
    "target_rebalance" : true,
    "member_deletion_protection_enable" : false
  }
}
```

Example Responses

Status code: 201

Normal response to POST requests.

```
{
  "pool" : {
    "type" : "",
    "vpc_id" : "",
    "lb_algorithm" : "LEAST_CONNECTIONS",
    "protocol" : "TCP",
    "description" : "",
    "admin_state_up" : true,
    "member_deletion_protection_enable" : false,
    "loadbalancers" : [ {
      "id" : "098b2f68-af1c-41a9-8efd-69958722af62"
    } ],
    "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
    "session_persistence" : null,
    "healthmonitor_id" : null,
    "listeners" : [ {
      "id" : "0b11747a-b139-492f-9692-2df0b1c87193"
    } ],
    "members" : [ ],
    "id" : "36ce7086-a496-4666-9064-5ba0e6840c75",
    "name" : "My pool",
    "ip_version" : "v4",
    "slow_start" : null
  },
  "request_id" : "2d974978-0733-404d-a21a-b29204f4803a"
}
```

Status Codes

Status Code	Description
201	Normal response to POST requests.

Error Codes

See [Error Codes](#).

4.11.2 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 4-280 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-281 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the last record on the previous page. Note: <ul style="list-style-type: none">This parameter must be used together with limit.If this parameter is not specified, the first page will be queried.This parameter cannot be left blank or set to an invalid ID.

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records on each page. Minimum: 0 Maximum: 2000 Default: 2000
page_reverse	No	Boolean	Specifies whether to use reverse query. Values: <ul style="list-style-type: none"> • true: Query the previous page. • false (default): Query the next page. Note: <ul style="list-style-type: none"> • This parameter must be used together with limit. • If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker.
description	No	Array	Provides supplementary information about the backend server group. Multiple descriptions can be queried in the format of <i>description=xxx&description=xx</i> .
admin_state_up	No	Boolean	Specifies the administrative status of the backend server group.
healthmonitor_id	No	Array	Specifies the ID of the health check configured for the backend server group. Multiple IDs can be queried in the format of <i>healthmonitor_id=xxx&healthmonitor_id=xxx</i> .
id	No	Array	Specifies the ID of the backend server group. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> .

Parameter	Mandatory	Type	Description
name	No	Array	Specifies the backend server group name. Multiple names can be queried in the format of <i>name=xxx&name=xxx</i> .
loadbalancer_id	No	Array	Specifies the ID of the load balancer with which the backend server group is associated. Multiple IDs can be queried in the format of <i>loadbalancer_id=xxx&loadbalancer_id=xxx</i> .
protocol	No	Array	Specifies the protocol used by the backend server group to receive requests from the load balancer. The value can be TCP, UDP, IP, TLS, HTTP, HTTPS, gRPC, or QUIC . QUIC is not supported. Multiple protocols can be queried in the format of <i>protocol=xxx&protocol=xxx</i> .

Parameter	Mandatory	Type	Description
lb_algorithm	No	Array	<p>Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"> ● ROUND_ROBIN: weighted round robin ● LEAST_CONNECTIONS: weighted least connections ● SOURCE_IP: source IP hash ● QUIC_CID: connection ID ● 2_TUPLE_HASH: 2-tuple hash that is only available for IP backend server groups ● 3_TUPLE_HASH: 3-tuple hash that is only available for IP backend server groups ● 4_TUPLE_HASH: 4-tuple hash that is only available for IP backend server groups <p>Multiple algorithms can be queried in the format of <i>lb_algorithm=xxx&lb_algorithm=m=xxx</i>.</p> <p>QUIC_CID is not supported.</p>

Parameter	Mandatory	Type	Description
enterprise_project_id	No	Array	<p>Specifies the enterprise project ID.</p> <ul style="list-style-type: none">• If this parameter is not passed, resources in the default enterprise project are queried, and authentication is performed based on the default enterprise project.• If this parameter is passed, its value can be the ID of an existing enterprise project (resources in the specific enterprise project are required) or all_granted_eps (resources in all enterprise projects are queried). <p>Multiple IDs can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p>
ip_version	No	Array	<p>Specifies the IP address version supported by the backend server group.</p> <p>Multiple versions can be queried in the format of <i>ip_version=xxx&ip_version=xxx</i>.</p>
member_address	No	Array	<p>Specifies the private IP address bound to the backend server. This is a query parameter and will not be included in the response.</p> <p>Multiple IP addresses can be queried in the format of <i>member_address=xxx&member_address=xxx</i>.</p>

Parameter	Mandatory	Type	Description
member_device_id	No	Array	Specifies the ID of the cloud server that serves as a backend server. This parameter is used only as a query condition and is not included in the response. Multiple IDs can be queried in the format of <i>member_device_id=xxx&member_device_id=xxx</i> .
member_deletion_protection_enable	No	Boolean	Specifies whether to enable removal protection on backend servers. <ul style="list-style-type: none">• true: Enable removal protection.• false: Disable removal protection. All backend servers will be queried if this parameter is not passed. This parameter is unsupported. Please do not use it.
listener_id	No	Array	Specifies the IDs of the associated listeners, including the listeners associated through forwarding policies. Multiple IDs can be queried in the format of <i>listener_id=xxx&listener_id=xxx</i> .
member_instance_id	No	Array	Specifies the backend server ID. This parameter is used only as a query condition and is not included in the response. Multiple IDs can be queried in the format of <i>member_instance_id=xxx&member_instance_id=xxx</i> .
vpc_id	No	Array	Specifies the ID of the VPC where the backend server group works.

Parameter	Mandatory	Type	Description
type	No	Array	Specifies the type of the backend server group. Values: <ul style="list-style-type: none"> instance: Any type of backend servers can be added. vpc_id is mandatory. ip: Only IP as backend servers can be added. vpc_id cannot be specified. "": Any type of backend servers can be added.

Request Parameters

Table 4-282 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-283 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
page_info	PageInfo object	Shows pagination information.
pools	Array of Pool objects	Lists the backend server groups.

Table 4-284 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

Table 4-285 Pool

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the backend server group.
description	String	Provides supplementary information about the backend server group.
healthmonitor_id	String	Specifies the ID of the health check configured for the backend server group.
id	String	Specifies the backend server group ID.
lb_algorithm	String	<p>Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"> ● ROUND_ROBIN: weighted round robin ● LEAST_CONNECTIONS: weighted least connections ● SOURCE_IP: source IP hash ● QUIC_CID: connection ID ● 2_TUPLE_HASH: 2-tuple hash that is only available for IP backend server groups ● 3_TUPLE_HASH: 3-tuple hash that is only available for IP backend server groups ● 4_TUPLE_HASH: 4-tuple hash that is only available for IP backend server groups Note: <ul style="list-style-type: none"> ● If the value is SOURCE_IP, the weight parameter will not take effect for backend servers. ● QUIC_CID is supported only when the protocol of the backend server group is QUIC. <p>QUIC_CID is not supported.</p>

Parameter	Type	Description
listeners	Array of ListenerRef objects	Specifies the IDs of the listeners with which the backend server group is associated.
loadbalancers	Array of LoadBalancerRef objects	Specifies the IDs of the load balancers with which the backend server group is associated.
members	Array of MemberRef objects	Specifies the IDs of the backend servers in the backend server group.
name	String	Specifies the backend server group name.
project_id	String	Specifies the project ID.

Parameter	Type	Description
protocol	String	<p>Specifies the protocol used by the backend server group to receive requests.</p> <p>The value can be TCP, UDP, IP, TLS, HTTP, HTTPS, gRPC, or QUIC.</p> <p>Note:</p> <ul style="list-style-type: none"> • If the listener's protocol is UDP, the protocol of the backend server group must be UDP or QUIC. • If the listener's protocol is TCP, the protocol of the backend server group must be TCP. • If the listener's protocol is IP, the protocol of the backend server group must be IP. • If the listener's protocol is HTTP, the protocol of the backend server group must be HTTP. • If the listener's protocol is HTTPS, the protocol of the backend server group can be HTTP, HTTPS, or gRPC. • If the listener's protocol is TERMINATED_HTTPS, the protocol of the backend server group must be HTTP. • If the listener's protocol is QUIC, the protocol of the backend server group can be HTTP, HTTPS, or gRPC. • If the listener's protocol is TLS, the protocol of the backend server group can be TLS or TCP. If protocol of the backend server group is TCP, the ip_version must be set to v4. <p>Note:</p> <ul style="list-style-type: none"> • If protocol of the backend server group is QUIC, session_persistence must be set to true, with type set to SOURCE_IP. • If protocol of the backend server group is gRPC, http2_enable of the listener must be set to true. QUIC is not supported.
session_persistence	SessionPersistence object	Specifies the sticky session.
ip_version	String	Specifies the IP address version supported by the backend server group.

Parameter	Type	Description
slow_start	SlowStart object	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. This parameter can be used when the protocol of the backend server group is HTTP or HTTPS. An error will be returned if the protocol is not HTTP or HTTPS.
member_deletion_protection_enable	Boolean	Specifies whether to enable removal protection. <ul style="list-style-type: none"> ● true: Enable removal protection. ● false: Disable removal protection. NOTE Disable removal protection for all your resources before deleting your account. This parameter is unsupported. Please do not use it.
created_at	String	Specifies the time when a backend server group was created. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
updated_at	String	Specifies the time when when a backend server group was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
vpc_id	String	Specifies the ID of the VPC where the backend server group works.
type	String	Specifies the type of the backend server group. Values: <ul style="list-style-type: none"> ● instance: Any type of backend servers can be added. vpc_id is mandatory. ● ip: Only IP as backend servers can be added. vpc_id cannot be specified. ● "": Any type of backend servers can be added.
enterprise_project_id	String	Specifies the enterprise project ID of the IP address group.

Table 4-286 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-287 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-288 MemberRef

Parameter	Type	Description
id	String	Specifies the backend server ID.

Table 4-289 SessionPersistence

Parameter	Type	Description
cookie_name	String	<p>Specifies the cookie name.</p> <p>The name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</p> <p>Note:</p> <p>This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned.</p> <p>This parameter is unsupported. Please do not use it.</p>
type	String	<p>Specifies the sticky session type. The value can be SOURCE_IP, HTTP_COOKIE, or APP_COOKIE.</p> <p>Note:</p> <ul style="list-style-type: none">• If the protocol of the backend server group is TCP or UDP, only SOURCE_IP takes effect.• If the protocol of the backend server group is HTTP or HTTPS, the value can only be HTTP_COOKIE.

Parameter	Type	Description
persistence_timeout	Integer	<p>Specifies the stickiness duration, in minutes. This parameter will not take effect when type is set to APP_COOKIE.</p> <ul style="list-style-type: none"> If the protocol of the backend server group is TCP, UDP, or QUIC, the value ranges from 1 to 60, and the default value is 1. If the protocol of the backend server group is HTTP or HTTPS, the value ranges from 1 to 1440, and the default value is 1440. <p>QUIC protocol is not supported.</p>

Table 4-290 SlowStart

Parameter	Type	Description
enable	Boolean	<p>Specifies whether to enable slow start.</p> <ul style="list-style-type: none"> true: Enable slow start. false: Disable slow start. <p>Default: false</p>
duration	Integer	<p>Specifies the slow start duration, in seconds. The value ranges from 30 to 1200, and the default value is 30.</p> <p>Minimum: 30 Maximum: 1200 Default: 30</p>

Example Requests

Querying backend server groups

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools?limit=2
```

Example Responses

Status code: 200

Successful request.

```
{
  "pools": [ {
    "lb_algorithm": "ROUND_ROBIN",
    "protocol": "HTTP",
    "type": "",
    "vpc_id": "",
    "description": "",
    "admin_state_up": true,
    "member_deletion_protection_enable": false,
```



```
"loadbalancers" : [ {
  "id" : "309a0f61-0b62-45f2-97d1-742f3434338e"
} ],
"project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
"session_persistence" : {
  "cookie_name" : "my_cookie",
  "type" : "APP_COOKIE",
  "persistence_timeout" : 1
},
"healthmonitor_id" : "",
"listeners" : [ ],
"members" : [ ],
"id" : "73bd4fe0-ffbb-4b56-aab4-4f26ddf7a103",
"name" : "",
"ip_version" : "v4",
"pool_health" : {
  "minimum_healthy_member_count" : 0
}
}, {
  "lb_algorithm" : "SOURCE_IP",
  "protocol" : "TCP",
  "description" : "",
  "admin_state_up" : true,
  "member_deletion_protection_enable" : false,
  "loadbalancers" : [ {
    "id" : "d9763e59-64b7-4e93-aec7-0ff7881ef9bc"
  } ],
  "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
  "session_persistence" : {
    "cookie_name" : "",
    "type" : "SOURCE_IP",
    "persistence_timeout" : 1
  },
  "healthmonitor_id" : "",
  "listeners" : [ {
    "id" : "8d21db6f-b475-429e-a9cb-90439b0413b2"
  } ],
  "members" : [ ],
  "id" : "74db02d1-5711-4c77-b383-a450e2b93142",
  "name" : "pool_tcp_001",
  "ip_version" : "dualstack",
  "pool_health" : {
    "minimum_healthy_member_count" : 0
  }
} ],
"page_info" : {
  "next_marker" : "74db02d1-5711-4c77-b383-a450e2b93142",
  "previous_marker" : "73bd4fe0-ffbb-4b56-aab4-4f26ddf7a103",
  "current_count" : 2
},
"request_id" : "a1a7e852-1928-48f7-bbc9-ca8469898713"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.11.3 Viewing Details of a Backend Server Group

Function

This API is used to view details of a backend server group.

Calling Method

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

URI

GET /v3/{project_id}/elb/pools/{pool_id}

Table 4-291 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.

Request Parameters

Table 4-292 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-293 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
pool	Pool object	Specifies the backend server group.

Table 4-294 Pool

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the backend server group.
description	String	Provides supplementary information about the backend server group.
healthmonitor_id	String	Specifies the ID of the health check configured for the backend server group.
id	String	Specifies the backend server group ID.
lb_algorithm	String	<p>Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none">● ROUND_ROBIN: weighted round robin● LEAST_CONNECTIONS: weighted least connections● SOURCE_IP: source IP hash● QUIC_CID: connection ID● 2_TUPLE_HASH: 2-tuple hash that is only available for IP backend server groups● 3_TUPLE_HASH: 3-tuple hash that is only available for IP backend server groups● 4_TUPLE_HASH: 4-tuple hash that is only available for IP backend server groups Note:● If the value is SOURCE_IP, the weight parameter will not take effect for backend servers.● QUIC_CID is supported only when the protocol of the backend server group is QUIC. <p>QUIC_CID is not supported.</p>
listeners	Array of ListenerRef objects	Specifies the IDs of the listeners with which the backend server group is associated.
loadbalancers	Array of LoadBalancerRef objects	Specifies the IDs of the load balancers with which the backend server group is associated.
members	Array of MemberRef objects	Specifies the IDs of the backend servers in the backend server group.
name	String	Specifies the backend server group name.

Parameter	Type	Description
project_id	String	Specifies the project ID.
protocol	String	<p>Specifies the protocol used by the backend server group to receive requests.</p> <p>The value can be TCP, UDP, IP, TLS, HTTP, HTTPS, gRPC, or QUIC.</p> <p>Note:</p> <ul style="list-style-type: none"> • If the listener's protocol is UDP, the protocol of the backend server group must be UDP or QUIC. • If the listener's protocol is TCP, the protocol of the backend server group must be TCP. • If the listener's protocol is IP, the protocol of the backend server group must be IP. • If the listener's protocol is HTTP, the protocol of the backend server group must be HTTP. • If the listener's protocol is HTTPS, the protocol of the backend server group can be HTTP, HTTPS, or gRPC. • If the listener's protocol is TERMINATED_HTTPS, the protocol of the backend server group must be HTTP. • If the listener's protocol is QUIC, the protocol of the backend server group can be HTTP, HTTPS, or gRPC. • If the listener's protocol is TLS, the protocol of the backend server group can be TLS or TCP. If protocol of the backend server group is TCP, the ip_version must be set to v4. <p>Note:</p> <ul style="list-style-type: none"> • If protocol of the backend server group is QUIC, session_persistence must be set to true, with type set to SOURCE_IP. • If protocol of the backend server group is gRPC, http2_enable of the listener must be set to true. QUIC is not supported.
session_persistence	SessionPersistence object	Specifies the sticky session.
ip_version	String	Specifies the IP address version supported by the backend server group.

Parameter	Type	Description
slow_start	SlowStart object	<p>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.</p> <p>This parameter can be used when the protocol of the backend server group is HTTP or HTTPS. An error will be returned if the protocol is not HTTP or HTTPS.</p>
member_deletion_protection_enable	Boolean	<p>Specifies whether to enable removal protection.</p> <ul style="list-style-type: none">● true: Enable removal protection.● false: Disable removal protection. <p>NOTE Disable removal protection for all your resources before deleting your account.</p> <p>This parameter is unsupported. Please do not use it.</p>
created_at	String	<p>Specifies the time when a backend server group was created. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>
updated_at	String	<p>Specifies the time when when a backend server group was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>
vpc_id	String	<p>Specifies the ID of the VPC where the backend server group works.</p>
type	String	<p>Specifies the type of the backend server group.</p> <p>Values:</p> <ul style="list-style-type: none">● instance: Any type of backend servers can be added. vpc_id is mandatory.● ip: Only IP as backend servers can be added. vpc_id cannot be specified.● "": Any type of backend servers can be added.
enterprise_project_id	String	<p>Specifies the enterprise project ID of the IP address group.</p>

Table 4-295 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-296 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-297 MemberRef

Parameter	Type	Description
id	String	Specifies the backend server ID.

Table 4-298 SessionPersistence

Parameter	Type	Description
cookie_name	String	<p>Specifies the cookie name.</p> <p>The name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</p> <p>Note:</p> <p>This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned.</p> <p>This parameter is unsupported. Please do not use it.</p>
type	String	<p>Specifies the sticky session type. The value can be SOURCE_IP, HTTP_COOKIE, or APP_COOKIE.</p> <p>Note:</p> <ul style="list-style-type: none">• If the protocol of the backend server group is TCP or UDP, only SOURCE_IP takes effect.• If the protocol of the backend server group is HTTP or HTTPS, the value can only be HTTP_COOKIE.

Parameter	Type	Description
persistence_timeout	Integer	<p>Specifies the stickiness duration, in minutes. This parameter will not take effect when type is set to APP_COOKIE.</p> <ul style="list-style-type: none">• If the protocol of the backend server group is TCP, UDP, or QUIC, the value ranges from 1 to 60, and the default value is 1.• If the protocol of the backend server group is HTTP or HTTPS, the value ranges from 1 to 1440, and the default value is 1440. <p>QUIC protocol is not supported.</p>

Table 4-299 SlowStart

Parameter	Type	Description
enable	Boolean	<p>Specifies whether to enable slow start.</p> <ul style="list-style-type: none">• true: Enable slow start.• false: Disable slow start. <p>Default: false</p>
duration	Integer	<p>Specifies the slow start duration, in seconds. The value ranges from 30 to 1200, and the default value is 30.</p> <p>Minimum: 30 Maximum: 1200 Default: 30</p>

Example Requests

Querying 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" : {
    "type" : "",
    "vpc_id" : "",
    "lb_algorithm" : "LEAST_CONNECTIONS",
    "protocol" : "TCP",
    "description" : "My pool",
    "admin_state_up" : true,
  }
}
```

```
"member_deletion_protection_enable" : false,
"loadbalancers" : [ {
  "id" : "098b2f68-af1c-41a9-8efd-69958722af62"
} ],
"project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
"session_persistence" : null,
"healthmonitor_id" : "",
"listeners" : [ {
  "id" : "0b11747a-b139-492f-9692-2df0b1c87193"
}, {
  "id" : "61942790-2367-482a-8b0e-93840ea2a1c6"
}, {
  "id" : "fd8f954c-f0f8-4d39-bb1d-41637cd6b1be"
} ],
"members" : [ ],
"id" : "36ce7086-a496-4666-9064-5ba0e6840c75",
"name" : "My pool.",
"ip_version" : "dualstack",
"pool_health" : {
  "minimum_healthy_member_count" : 0
}
},
"request_id" : "c1a60da2-1ec7-4a1c-b4cc-73e1a57b368e"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.11.4 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 4-300 Path Parameters

Parameter	Mandatory	Type	Description
pool_id	Yes	String	Specifies the backend server group ID.
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-301 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-302 Request body parameters

Parameter	Mandatory	Type	Description
pool	Yes	UpdatePoolOption object	Specifies the backend server group.

Table 4-303 UpdatePoolOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the backend server group. The value can only be updated to true .
description	No	String	Provides supplementary information about the backend server group. Minimum: 0 Maximum: 255

Parameter	Mandatory	Type	Description
lb_algorithm	No	String	<p>Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none"> ● ROUND_ROBIN: weighted round robin ● LEAST_CONNECTIONS: weighted least connections ● SOURCE_IP: source IP hash ● QUIC_CID: connection ID ● 2_TUPLE_HASH: 2-tuple hash that is only available for IP backend server groups ● 3_TUPLE_HASH: 3-tuple hash that is only available for IP backend server groups ● 4_TUPLE_HASH: 4-tuple hash that is only available for IP backend server groups <p>Note:</p> <ul style="list-style-type: none"> ● If the value is SOURCE_IP, the weight parameter will not take effect for backend servers. ● QUIC_CID is supported only when the protocol of the backend server group is QUIC. <p>QUIC_CID is not supported.</p>
name	No	String	<p>Specifies the backend server group name.</p> <p>Minimum: 0</p> <p>Maximum: 255</p>
session_persistence	No	UpdatePoolSessionPersistenceOption object	Specifies the sticky session.

Parameter	Mandatory	Type	Description
slow_start	No	UpdatePoolSlowStartOption object	<p>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.</p> <p>This parameter can be used when the protocol of the backend server group is HTTP or HTTPS. An error will be returned if the protocol is not HTTP or HTTPS.</p>
member_deletion_protection_enable	No	Boolean	<p>Specifies whether to enable removal protection for the load balancer.</p> <ul style="list-style-type: none"> ● true: Enable removal protection. ● false: Disable removal protection. <p>NOTE Disable removal protection for all your resources before deleting your account.</p> <p>This parameter is unsupported. Please do not use it.</p>
vpc_id	No	String	<p>Specifies the ID of the VPC where the backend server group works.</p> <p>This parameter can be updated only when vpc_id is left blank.</p> <p>Minimum: 0 Maximum: 36</p>

Parameter	Mandatory	Type	Description
type	No	String	Specifies the type of the backend server group. Values: <ul style="list-style-type: none">• instance: Any type of backend servers can be added. vpc_id is mandatory.• ip: Only IP as backend servers can be added. vpc_id cannot be specified.• "": Any type of backend servers can be added. Note: This parameter can be updated only when type is left blank.
pool_health	No	PoolHealth object	Specifies the configurations of the pool health feature.

Table 4-304 UpdatePoolSessionPersistenceOption

Parameter	Mandatory	Type	Description
cookie_name	No	String	Specifies the cookie name. The name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.). Note: This parameter will take effect only when type is set to APP_COOKIE . Otherwise, an error will be returned. This parameter is unsupported. Please do not use it.

Parameter	Mandatory	Type	Description
type	No	String	<p>Specifies the sticky session type. The value can be SOURCE_IP, HTTP_COOKIE, or APP_COOKIE.</p> <p>Note:</p> <ul style="list-style-type: none"> If the protocol of the backend server group is TCP or UDP, only SOURCE_IP takes effect. If the protocol of the backend server group is HTTP or HTTPS, the value can only be HTTP_COOKIE. <p>QUIC protocol is not supported.</p>
persistence_timeout	No	Integer	<p>Specifies the stickiness duration, in minutes. This parameter will not take effect when type is set to APP_COOKIE.</p> <ul style="list-style-type: none"> If the protocol of the backend server group is TCP, UDP, or QUIC, the value ranges from 1 to 60, and the default value is 1. If the protocol of the backend server group is HTTP or HTTPS, the value ranges from 1 to 1440, and the default value is 1440. <p>QUIC protocol is not supported.</p>

Table 4-305 UpdatePoolSlowStartOption

Parameter	Mandatory	Type	Description
enable	No	Boolean	<p>Specifies whether to enable slow start.</p> <ul style="list-style-type: none"> true: Enable slow start. false: Disable slow start.

Parameter	Mandatory	Type	Description
duration	No	Integer	Specifies the slow start duration, in seconds. The value ranges from 30 to 1200 , and the default value is 30 . Minimum: 30 Maximum: 1200

Table 4-306 PoolHealth

Parameter	Mandatory	Type	Description
minimum_healthy_member_count	No	Integer	If the number of healthy backend servers is less than the value specified for this parameter, the backend server group is considered as unhealthy. The value can be 0 (disabled) or 1 (enabled).

Response Parameters

Status code: **200**

Table 4-307 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
pool	Pool object	Specifies the backend server group.

Table 4-308 Pool

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the backend server group.
description	String	Provides supplementary information about the backend server group.
healthmonitor_id	String	Specifies the ID of the health check configured for the backend server group.

Parameter	Type	Description
id	String	Specifies the backend server group ID.
lb_algorithm	String	<p>Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none">● ROUND_ROBIN: weighted round robin● LEAST_CONNECTIONS: weighted least connections● SOURCE_IP: source IP hash● QUIC_CID: connection ID● 2_TUPLE_HASH: 2-tuple hash that is only available for IP backend server groups● 3_TUPLE_HASH: 3-tuple hash that is only available for IP backend server groups● 4_TUPLE_HASH: 4-tuple hash that is only available for IP backend server groups Note:● If the value is SOURCE_IP, the weight parameter will not take effect for backend servers.● QUIC_CID is supported only when the protocol of the backend server group is QUIC. <p>QUIC_CID is not supported.</p>
listeners	Array of ListenerRef objects	Specifies the IDs of the listeners with which the backend server group is associated.
loadbalancers	Array of LoadBalancerRef objects	Specifies the IDs of the load balancers with which the backend server group is associated.
members	Array of MemberRef objects	Specifies the IDs of the backend servers in the backend server group.
name	String	Specifies the backend server group name.
project_id	String	Specifies the project ID.

Parameter	Type	Description
protocol	String	<p>Specifies the protocol used by the backend server group to receive requests.</p> <p>The value can be TCP, UDP, IP, TLS, HTTP, HTTPS, gRPC, or QUIC.</p> <p>Note:</p> <ul style="list-style-type: none"> • If the listener's protocol is UDP, the protocol of the backend server group must be UDP or QUIC. • If the listener's protocol is TCP, the protocol of the backend server group must be TCP. • If the listener's protocol is IP, the protocol of the backend server group must be IP. • If the listener's protocol is HTTP, the protocol of the backend server group must be HTTP. • If the listener's protocol is HTTPS, the protocol of the backend server group can be HTTP, HTTPS, or gRPC. • If the listener's protocol is TERMINATED_HTTPS, the protocol of the backend server group must be HTTP. • If the listener's protocol is QUIC, the protocol of the backend server group can be HTTP, HTTPS, or gRPC. • If the listener's protocol is TLS, the protocol of the backend server group can be TLS or TCP. If protocol of the backend server group is TCP, the ip_version must be set to v4. <p>Note:</p> <ul style="list-style-type: none"> • If protocol of the backend server group is QUIC, session_persistence must be set to true, with type set to SOURCE_IP. • If protocol of the backend server group is gRPC, http2_enable of the listener must be set to true. QUIC is not supported.
session_persistence	SessionPersistence object	Specifies the sticky session.
ip_version	String	Specifies the IP address version supported by the backend server group.

Parameter	Type	Description
slow_start	SlowStart object	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. This parameter can be used when the protocol of the backend server group is HTTP or HTTPS. An error will be returned if the protocol is not HTTP or HTTPS.
member_deletion_protection_enable	Boolean	Specifies whether to enable removal protection. <ul style="list-style-type: none">● true: Enable removal protection.● false: Disable removal protection. NOTE Disable removal protection for all your resources before deleting your account. This parameter is unsupported. Please do not use it.
created_at	String	Specifies the time when a backend server group was created. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
updated_at	String	Specifies the time when when a backend server group was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
vpc_id	String	Specifies the ID of the VPC where the backend server group works.
type	String	Specifies the type of the backend server group. Values: <ul style="list-style-type: none">● instance: Any type of backend servers can be added. vpc_id is mandatory.● ip: Only IP as backend servers can be added. vpc_id cannot be specified.● "": Any type of backend servers can be added.
enterprise_project_id	String	Specifies the enterprise project ID of the IP address group.

Table 4-309 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-310 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-311 MemberRef

Parameter	Type	Description
id	String	Specifies the backend server ID.

Table 4-312 SessionPersistence

Parameter	Type	Description
cookie_name	String	<p>Specifies the cookie name.</p> <p>The name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</p> <p>Note:</p> <p>This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned.</p> <p>This parameter is unsupported. Please do not use it.</p>
type	String	<p>Specifies the sticky session type. The value can be SOURCE_IP, HTTP_COOKIE, or APP_COOKIE.</p> <p>Note:</p> <ul style="list-style-type: none">• If the protocol of the backend server group is TCP or UDP, only SOURCE_IP takes effect.• If the protocol of the backend server group is HTTP or HTTPS, the value can only be HTTP_COOKIE.

Parameter	Type	Description
persistence_timeout	Integer	<p>Specifies the stickiness duration, in minutes. This parameter will not take effect when type is set to APP_COOKIE.</p> <ul style="list-style-type: none"> If the protocol of the backend server group is TCP, UDP, or QUIC, the value ranges from 1 to 60, and the default value is 1. If the protocol of the backend server group is HTTP or HTTPS, the value ranges from 1 to 1440, and the default value is 1440. <p>QUIC protocol is not supported.</p>

Table 4-313 SlowStart

Parameter	Type	Description
enable	Boolean	<p>Specifies whether to enable slow start.</p> <ul style="list-style-type: none"> true: Enable slow start. false: Disable slow start. <p>Default: false</p>
duration	Integer	<p>Specifies the slow start duration, in seconds. The value ranges from 30 to 1200, and the default value is 30.</p> <p>Minimum: 30 Maximum: 1200 Default: 30</p>

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": {
```

```
{
  "type": "",
  "vpc_id": "",
  "lb_algorithm": "LEAST_CONNECTIONS",
  "protocol": "TCP",
  "description": "My pool update",
  "admin_state_up": true,
  "member_deletion_protection_enable": false,
  "loadbalancers": [ {
    "id": "098b2f68-af1c-41a9-8efd-69958722af62"
  } ],
  "project_id": "99a3fff0d03c428eac3678da6a7d0f24",
  "session_persistence": null,
  "healthmonitor_id": null,
  "listeners": [ {
    "id": "0b11747a-b139-492f-9692-2df0b1c87193"
  }, {
    "id": "61942790-2367-482a-8b0e-93840ea2a1c6"
  }, {
    "id": "fd8f954c-f0f8-4d39-bb1d-41637cd6b1be"
  } ],
  "members": [ ],
  "id": "36ce7086-a496-4666-9064-5ba0e6840c75",
  "name": "My pool.",
  "ip_version": "dualstack",
  "pool_health": {
    "minimum_healthy_member_count": 0
  }
},
"request_id": "8f40128b-c72b-4b64-986a-f7e2c633d75f"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.11.5 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 4-314 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.

Request Parameters

Table 4-315 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

None

Example Requests

Deleting a backend server group

```
DELETE https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools/36ce7086-  
a496-4666-9064-5ba0e6840c75
```

Example Responses

None

Status Codes

Status Code	Description
204	Successful request.

Error Codes

See [Error Codes](#).

4.12 Backend Server

4.12.1 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 4-316 Path Parameters

Parameter	Mandatory	Type	Description
pool_id	Yes	String	Specifies the ID of the backend server group.
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-317 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-318 Request body parameters

Parameter	Mandatory	Type	Description
member	Yes	CreateMemberOption object	Specifies the backend server.

Table 4-319 CreateMemberOption

Parameter	Mandatory	Type	Description
address	Yes	String	<p>Specifies the private IP address bound to the backend server.</p> <ul style="list-style-type: none">• If subnet_cidr_id is left blank, IP as a Backend is enabled. In this case, the IP address must be an IPv4 address.• If subnet_cidr_id is not left blank, the IP address can be IPv4 or IPv6. It must be in the subnet specified by subnet_cidr_id and can only be bound to the primary NIC of the backend server. <p>Minimum: 1 Maximum: 64</p>

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the backend server. The value can be true or false . Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether cloud servers exist. If cloud servers exist, the value is true . Otherwise, the value is false .
name	No	String	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. Minimum: 0 Maximum: 255
project_id	No	String	Specifies the project ID. Minimum: 1 Maximum: 32
protocol_port	No	Integer	Specifies the port used by the backend server to receive requests. NOTE This parameter can be left blank because it does not take effect if any_port_enable is set to true for a backend server group. Minimum: 1 Maximum: 65535

Parameter	Mandatory	Type	Description
subnet_cidr_id	No	String	<p>Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. neutron_subnet_id defines the IPv4 subnets, and neutron_network_id defines the IPv6 subnets.</p> <p>You can query parameters neutron_subnet_id and neutron_network_id in the response by calling the API GET https:// {VPC_Endpoint}/v1/ {project_id}/subnets to get the IPv4 subnet ID and IPv6 subnet ID respectively.</p> <p>Note:</p> <ul style="list-style-type: none"> • The IPv4 or IPv6 subnet must be in the same VPC as the subnet of the load balancer. • If ip_target_enable is set to true, this parameter can be left blank. In this case, IP as backend servers must use private IPv4 addresses, and the protocol of the backend server group must be TCP, HTTP, or HTTPS. • If ip_target_enable is set to false, this parameter must be specified. <p>Minimum: 1 Maximum: 36</p>

Parameter	Mandatory	Type	Description
weight	No	Integer	Specifies the weight of the backend server. Requests are routed to backend servers in the same backend server group based on their weights. The value ranges from 0 to 100 , and the default value is 1 . 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. If lb_algorithm is set to SOURCE_IP , this parameter will not take effect.

Response Parameters

Status code: 201

Table 4-320 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
member	Member object	Specifies the backend server.

Table 4-321 Member

Parameter	Type	Description
id	String	Specifies the backend server ID. 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 associated with the load balancer.
name	String	Specifies the backend server name. Note: The name is not an ECS name.
project_id	String	Specifies the project ID of the backend server.

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the backend server. The value can be true or false . Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether cloud servers exist. If cloud servers exist, the value is true . Otherwise, the value is false .
subnet_cidr_id	String	Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. This parameter can be left blank, indicating that IP as a Backend has been enabled for the load balancer. In this case, IP addresses of these servers must be IPv4 addresses, and the protocol of the backend server group must be TCP, HTTP, or HTTPS. The IPv4 or IPv6 subnet must be in the same VPC as the subnet of the load balancer.
protocol_port	Integer	Specifies the port used by the backend server to receive requests. NOTE This parameter can be left blank because it does not take effect if any_port_enable is set to true for a backend server group. Minimum: 1 Maximum: 65535
weight	Integer	Specifies the weight of the backend server. Requests are routed to backend servers in the same backend server group based on their weights. The value ranges from 0 to 100 , and the default value is 1 . 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. If lb_algorithm is set to SOURCE_IP , this parameter will not take effect. Minimum: 0 Maximum: 100

Parameter	Type	Description
address	String	Specifies the private IP address bound to the backend server. <ul style="list-style-type: none"> If subnet_cidr_id is left blank, IP as a Backend is enabled. In this case, the IP address must be an IPv4 address. If subnet_cidr_id is not left blank, the IP address can be IPv4 or IPv6. It must be in the subnet specified by subnet_cidr_id and can only be bound to the primary NIC of the backend server.
ip_version	String	Specifies the IP version supported by the backend server. The value can be v4 (IPv4) or v6 (IPv6), depending on the value of address returned by the system.
operating_status	String	Specifies the health status of the backend server if listener_id under status is not specified. The value can be one of the following: <ul style="list-style-type: none"> ONLINE: The backend server is running normally. NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs. OFFLINE: The cloud server used as the backend server is stopped or does not exist.
status	Array of MemberStatus objects	Specifies the health status of the backend server if listener_id is specified.
created_at	String	Specifies the time when a backend server was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
updated_at	String	Specifies the time when a backend server was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
member_type	String	Specifies the type of the backend server. Values: <ul style="list-style-type: none"> ip: IP as backend servers instance: ECSs used as backend servers
instance_id	String	Specifies the ID of the ECS used as the backend server. If this parameter is left blank, the backend server is not an ECS. For example, it may be an IP address.

Table 4-322 MemberStatus

Parameter	Type	Description
listener_id	String	Specifies the listener ID.
operating_status	String	Specifies the health status of the backend server. The value can be one of the following: <ul style="list-style-type: none">● ONLINE: The backend server is running normally.● NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs.● OFFLINE: The cloud server used as the backend server is stopped or does not exist.

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 3: Adding a backend server to an IP backend server group

```
POST https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools/36ce7086-a496-4666-9064-5ba0e6840c75/members
```

```
{
  "member" : {
    "protocol_port" : 0,
    "name" : "My IP pool member",
    "address" : "120.10.10.16"
  }
}
```

Example Responses

Status code: 201

Normal response to POST requests.

```
{
  "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"
  },
  "request_id": "f354090d-41db-41e0-89c6-7a943ec50792"
}
```

Status Codes

Status Code	Description
201	Normal response to POST requests.

Error Codes

See [Error Codes](#).

4.12.2 Querying Backend Servers

Function

This API is used to query all backend servers.

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 4-323 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 4-324 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the last record on the previous page. Note: <ul style="list-style-type: none">• This parameter must be used together with limit.• If this parameter is not specified, the first page will be queried.• This parameter cannot be left blank or set to an invalid ID.
limit	No	Integer	Specifies the number of records on each page. Minimum: 0 Maximum: 2000 Default: 2000
page_reverse	No	Boolean	Specifies whether to use reverse query. Values: <ul style="list-style-type: none">• true: Query the previous page.• false (default): Query the next page. Note: <ul style="list-style-type: none">• This parameter must be used together with limit.• If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker.

Parameter	Mandatory	Type	Description
name	No	Array	Specifies the backend server name. Multiple names can be queried in the format of <i>name=xxx&name=xxx</i> .
weight	No	Array	Specifies the weight of the backend server. Requests are routed to backend servers in the same backend server group based on their weights. The value ranges from 0 to 100 . 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. Multiple weights can be queried in the format of <i>weight=xxx&weight=xxx</i> .
admin_state_up	No	Boolean	Specifies the administrative status of the backend server. The value can be true or false . Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether cloud servers exist. If cloud servers exist, the value is true . Otherwise, the value is false .
subnet_cidr_id	No	Array	Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. Multiple IDs can be queried in the format of <i>subnet_cidr_id=xxx&subnet_cidr_id=xxx</i> .
address	No	Array	Specifies the IP address bound to the backend server. Multiple IP addresses can be queried in the format of <i>address=xxx&address=xxx</i> .

Parameter	Mandatory	Type	Description
protocol_port	No	Array	Specifies the port used by the backend server to receive requests. Multiple ports can be queried in the format of <i>protocol_port=xxx&protocol_port=xxx</i> .
id	No	Array	Specifies the backend server ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> .
operating_status	No	Array	Specifies the health status of the backend server. The value can be one of the following: <ul style="list-style-type: none">● ONLINE: The backend server is running normally.● NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs.● OFFLINE: The cloud server used as the backend server is stopped or does not exist. Multiple operating statuses can be queried in the format of <i>operating_status=xxx&operating_status=xxx</i> .

Parameter	Mandatory	Type	Description
enterprise_project_id	No	Array	<p>Specifies the enterprise project ID.</p> <ul style="list-style-type: none">• If this parameter is not passed, resources in the default enterprise project are queried, and authentication is performed based on the default enterprise project.• If this parameter is passed, its value can be the ID of an existing enterprise project (resources in the specific enterprise project are required) or all_granted_eps (resources in all enterprise projects are queried). <p>Multiple IDs can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p>
ip_version	No	Array	<p>Specifies the IP version supported by the backend server. The value can be v4 (IPv4) or v6 (IPv6).</p>
member_type	No	Array	<p>Specifies the type of the backend server. Values:</p> <ul style="list-style-type: none">• ip: IP as backend servers• instance: ECSs used as backend servers <p>Multiple values can be queried in the format of <i>member_type=xxx&member_type=xxx</i>.</p>
instance_id	No	Array	<p>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.</p> <p>Multiple instance id can be queried in the format of <i>instance_id=xxx&instance_id=xxx</i>.</p>

Request Parameters

Table 4-325 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200**Table 4-326** Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
page_info	PageInfo object	Shows pagination information.
members	Array of Member objects	Lists the backend servers.

Table 4-327 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

Table 4-328 Member

Parameter	Type	Description
id	String	Specifies the backend server ID. 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 associated with the load balancer.
name	String	Specifies the backend server name. Note: The name is not an ECS name.
project_id	String	Specifies the project ID of the backend server.
admin_state_up	Boolean	Specifies the administrative status of the backend server. The value can be true or false . Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether cloud servers exist. If cloud servers exist, the value is true . Otherwise, the value is false .
subnet_cidr_id	String	Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. This parameter can be left blank, indicating that IP as a Backend has been enabled for the load balancer. In this case, IP addresses of these servers must be IPv4 addresses, and the protocol of the backend server group must be TCP, HTTP, or HTTPS. The IPv4 or IPv6 subnet must be in the same VPC as the subnet of the load balancer.
protocol_port	Integer	Specifies the port used by the backend server to receive requests. NOTE This parameter can be left blank because it does not take effect if any_port_enable is set to true for a backend server group. Minimum: 1 Maximum: 65535

Parameter	Type	Description
weight	Integer	<p>Specifies the weight of the backend server. Requests are routed to backend servers in the same backend server group based on their weights.</p> <p>The value ranges from 0 to 100, and the default value is 1. 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>If lb_algorithm is set to SOURCE_IP, this parameter will not take effect.</p> <p>Minimum: 0 Maximum: 100</p>
address	String	<p>Specifies the private IP address bound to the backend server.</p> <ul style="list-style-type: none"> • If subnet_cidr_id is left blank, IP as a Backend is enabled. In this case, the IP address must be an IPv4 address. • If subnet_cidr_id is not left blank, the IP address can be IPv4 or IPv6. It must be in the subnet specified by subnet_cidr_id and can only be bound to the primary NIC of the backend server.
ip_version	String	<p>Specifies the IP version supported by the backend server. The value can be v4 (IPv4) or v6 (IPv6), depending on the value of address returned by the system.</p>
operating_status	String	<p>Specifies the health status of the backend server if listener_id under status is not specified. The value can be one of the following:</p> <ul style="list-style-type: none"> • ONLINE: The backend server is running normally. • NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs. • OFFLINE: The cloud server used as the backend server is stopped or does not exist.
status	Array of MemberStatus objects	<p>Specifies the health status of the backend server if listener_id is specified.</p>
created_at	String	<p>Specifies the time when a backend server was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>

Parameter	Type	Description
updated_at	String	Specifies the time when a backend server was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
member_type	String	Specifies the type of the backend server. Values: <ul style="list-style-type: none"> • ip: IP as backend servers • instance: ECSs used as backend servers
instance_id	String	Specifies the ID of the ECS used as the backend server. If this parameter is left blank, the backend server is not an ECS. For example, it may be an IP address.

Table 4-329 MemberStatus

Parameter	Type	Description
listener_id	String	Specifies the listener ID.
operating_status	String	Specifies the health status of the backend server. The value can be one of the following: <ul style="list-style-type: none"> • ONLINE: The backend server is running normally. • NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs. • OFFLINE: The cloud server used as the backend server is stopped or does not exist.

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"
}, {
"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"
}, {
"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"
}],
"page_info" : {
"previous_marker" : "0aa23a52-1ac2-4a2d-8dfa-1e11cb26079d",
"current_count" : 3
},
"request_id" : "87e29592-7ab8-401a-9bf4-66cf6747eab9"
}

```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.12.3 Viewing Details of a Backend Server

Function

This API is used to view 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 4-330 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.
member_id	Yes	String	Specifies the backend server ID. 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 associated with the load balancer.

Request Parameters

Table 4-331 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-332 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
member	Member object	Specifies the backend server.

Table 4-333 Member

Parameter	Type	Description
id	String	Specifies the backend server ID. 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 associated with the load balancer.
name	String	Specifies the backend server name. Note: The name is not an ECS name.
project_id	String	Specifies the project ID of the backend server.
admin_state_up	Boolean	Specifies the administrative status of the backend server. The value can be true or false . Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether cloud servers exist. If cloud servers exist, the value is true . Otherwise, the value is false .
subnet_cidr_id	String	Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. This parameter can be left blank, indicating that IP as a Backend has been enabled for the load balancer. In this case, IP addresses of these servers must be IPv4 addresses, and the protocol of the backend server group must be TCP, HTTP, or HTTPS. The IPv4 or IPv6 subnet must be in the same VPC as the subnet of the load balancer.
protocol_port	Integer	Specifies the port used by the backend server to receive requests. NOTE This parameter can be left blank because it does not take effect if any_port_enable is set to true for a backend server group. Minimum: 1 Maximum: 65535

Parameter	Type	Description
weight	Integer	<p>Specifies the weight of the backend server. Requests are routed to backend servers in the same backend server group based on their weights.</p> <p>The value ranges from 0 to 100, and the default value is 1. 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>If lb_algorithm is set to SOURCE_IP, this parameter will not take effect.</p> <p>Minimum: 0 Maximum: 100</p>
address	String	<p>Specifies the private IP address bound to the backend server.</p> <ul style="list-style-type: none">• If subnet_cidr_id is left blank, IP as a Backend is enabled. In this case, the IP address must be an IPv4 address.• If subnet_cidr_id is not left blank, the IP address can be IPv4 or IPv6. It must be in the subnet specified by subnet_cidr_id and can only be bound to the primary NIC of the backend server.
ip_version	String	<p>Specifies the IP version supported by the backend server. The value can be v4 (IPv4) or v6 (IPv6), depending on the value of address returned by the system.</p>
operating_status	String	<p>Specifies the health status of the backend server if listener_id under status is not specified. The value can be one of the following:</p> <ul style="list-style-type: none">• ONLINE: The backend server is running normally.• NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs.• OFFLINE: The cloud server used as the backend server is stopped or does not exist.
status	Array of MemberStatus objects	<p>Specifies the health status of the backend server if listener_id is specified.</p>
created_at	String	<p>Specifies the time when a backend server was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>

Parameter	Type	Description
updated_at	String	Specifies the time when a backend server was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
member_type	String	Specifies the type of the backend server. Values: <ul style="list-style-type: none"> • ip: IP as backend servers • instance: ECSs used as backend servers
instance_id	String	Specifies the ID of the ECS used as the backend server. If this parameter is left blank, the backend server is not an ECS. For example, it may be an IP address.

Table 4-334 MemberStatus

Parameter	Type	Description
listener_id	String	Specifies the listener ID.
operating_status	String	Specifies the health status of the backend server. The value can be one of the following: <ul style="list-style-type: none"> • ONLINE: The backend server is running normally. • NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs. • OFFLINE: The cloud server used as the backend server is stopped or does not exist.

Example Requests

Querying 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"
},
"request_id" : "45688823-45f1-40cd-9d24-e51a9574a45b"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.12.4 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 4-335 Path Parameters

Parameter	Mandatory	Type	Description
member_id	Yes	String	Specifies the backend server ID. 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 associated with the load balancer.

Parameter	Mandatory	Type	Description
pool_id	Yes	String	Specifies the ID of the backend server group.
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-336 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-337 Request body parameters

Parameter	Mandatory	Type	Description
member	Yes	UpdateMemberOption object	Specifies the backend server.

Table 4-338 UpdateMemberOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the backend server. Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether cloud servers exist. If cloud servers exist, the value is true . Otherwise, the value is false . This parameter is unsupported. Please do not use it.
name	No	String	Specifies the backend server name. Minimum: 0 Maximum: 255

Parameter	Mandatory	Type	Description
weight	No	Integer	<p>Specifies the weight of the backend server. Requests are routed to backend servers in the same backend server group based on their weights. The value ranges from 0 to 100, and the default value is 1. 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>If lb_algorithm is set to SOURCE_IP, this parameter will not take effect.</p> <p>Minimum: 0 Maximum: 100</p>
protocol_port	No	Integer	<p>Specifies the port used by the backend server to receive requests.</p> <p>NOTE This parameter cannot be updated if any_port_enable is set to true for a backend server group.</p> <p>Minimum: 1 Maximum: 65535</p>

Response Parameters

Status code: 200

Table 4-339 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
member	Member object	Specifies the backend server.

Table 4-340 Member

Parameter	Type	Description
id	String	Specifies the backend server ID. 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 associated with the load balancer.
name	String	Specifies the backend server name. Note: The name is not an ECS name.
project_id	String	Specifies the project ID of the backend server.
admin_state_up	Boolean	Specifies the administrative status of the backend server. The value can be true or false . Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether cloud servers exist. If cloud servers exist, the value is true . Otherwise, the value is false .
subnet_cidr_id	String	Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. This parameter can be left blank, indicating that IP as a Backend has been enabled for the load balancer. In this case, IP addresses of these servers must be IPv4 addresses, and the protocol of the backend server group must be TCP, HTTP, or HTTPS. The IPv4 or IPv6 subnet must be in the same VPC as the subnet of the load balancer.
protocol_port	Integer	Specifies the port used by the backend server to receive requests. NOTE This parameter can be left blank because it does not take effect if any_port_enable is set to true for a backend server group. Minimum: 1 Maximum: 65535

Parameter	Type	Description
weight	Integer	<p>Specifies the weight of the backend server. Requests are routed to backend servers in the same backend server group based on their weights.</p> <p>The value ranges from 0 to 100, and the default value is 1. 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>If lb_algorithm is set to SOURCE_IP, this parameter will not take effect.</p> <p>Minimum: 0 Maximum: 100</p>
address	String	<p>Specifies the private IP address bound to the backend server.</p> <ul style="list-style-type: none"> • If subnet_cidr_id is left blank, IP as a Backend is enabled. In this case, the IP address must be an IPv4 address. • If subnet_cidr_id is not left blank, the IP address can be IPv4 or IPv6. It must be in the subnet specified by subnet_cidr_id and can only be bound to the primary NIC of the backend server.
ip_version	String	<p>Specifies the IP version supported by the backend server. The value can be v4 (IPv4) or v6 (IPv6), depending on the value of address returned by the system.</p>
operating_status	String	<p>Specifies the health status of the backend server if listener_id under status is not specified. The value can be one of the following:</p> <ul style="list-style-type: none"> • ONLINE: The backend server is running normally. • NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs. • OFFLINE: The cloud server used as the backend server is stopped or does not exist.
status	Array of MemberStatus objects	<p>Specifies the health status of the backend server if listener_id is specified.</p>
created_at	String	<p>Specifies the time when a backend server was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>

Parameter	Type	Description
updated_at	String	Specifies the time when a backend server was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
member_type	String	Specifies the type of the backend server. Values: <ul style="list-style-type: none"> • ip: IP as backend servers • instance: ECSs used as backend servers
instance_id	String	Specifies the ID of the ECS used as the backend server. If this parameter is left blank, the backend server is not an ECS. For example, it may be an IP address.

Table 4-341 MemberStatus

Parameter	Type	Description
listener_id	String	Specifies the listener ID.
operating_status	String	Specifies the health status of the backend server. The value can be one of the following: <ul style="list-style-type: none"> • ONLINE: The backend server is running normally. • NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs. • OFFLINE: The cloud server used as the backend server is stopped or does not exist.

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"
  },
  "request_id": "e7b569d4-15ad-494d-9dd9-8cd740eef8f6"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.12.5 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, persistent connections that have been established will be maintained.

Calling Method

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

URI

DELETE /v3/{project_id}/elb/pools/{pool_id}/members/{member_id}

Table 4-342 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

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. 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 associated with the load balancer. You can obtain the server ID by calling the API for querying the backend servers.

Request Parameters

Table 4-343 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

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

Status Codes

Status Code	Description
204	Successful request.

Error Codes

See [Error Codes](#).

4.13 Health Check

4.13.1 Configuring a Health Check

Function

This API is used to configure a health check.

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 4-344 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-345 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-346 Request body parameters

Parameter	Mandatory	Type	Description
healthmonitor	Yes	CreateHealthMonitorOption object	Specifies the health check.

Table 4-347 CreateHealthMonitorOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the health check. <ul style="list-style-type: none">• true (default): Health check is enabled.• false: Health check is disabled.
delay	Yes	Integer	Specifies the interval between health checks, in seconds. The value ranges from 1 to 50 .
domain_name	No	String	Specifies the domain name that HTTP requests are sent to during the health check. The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter. 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. This parameter is available only when type is set to HTTP . Minimum: 1 Maximum: 100

Parameter	Mandatory	Type	Description
expected_codes	No	String	<p>Specifies the expected HTTP status code. This parameter will take effect only when type is set to HTTP, HTTPS, or gRPC.</p> <p>The value options are as follows:</p> <ul style="list-style-type: none"> • A specific value, for example, 200 • A list of values that are separated with commas (,), for example, 200, 202 • A value range, for example, 200-204 <p>If type is set to gRPC, the default value is 0. If type is set to other protocols, the default value is 200.</p> <p>Minimum: 1 Maximum: 64</p>
http_method	No	String	<p>Specifies the HTTP method. The value can be GET, HEAD, POST, PUT, DELETE, TRACE, OPTIONS, CONNECT, or PATCH. The default value is GET.</p> <p>This parameter is available when type is set to HTTP or HTTPS.</p> <p>This parameter is unsupported. Please do not use it.</p> <p>Minimum: 1 Maximum: 16</p>
max_retries	Yes	Integer	<p>Specifies the number of consecutive health checks when the health check result of a backend server changes from OFFLINE to ONLINE.</p> <p>The value ranges from 1 to 10.</p> <p>Minimum: 1 Maximum: 10</p>

Parameter	Mandatory	Type	Description
max_retries_down	No	Integer	Specifies the number of consecutive health checks when the health check result of a backend server changes from ONLINE to OFFLINE . The value ranges from 1 to 10 , and the default value is 3 . Minimum: 1 Maximum: 10
monitor_port	No	Integer	Specifies the port used for the health check. If this parameter is left blank, a port of the backend server will be used by default. The port number ranges from 1 to 65535. Minimum: 1 Maximum: 65535
name	No	String	Specifies the health check name. Minimum: 0 Maximum: 255
pool_id	Yes	String	Specifies the ID of the backend server group for which the health check is configured.
project_id	No	String	Specifies the project ID. Minimum: 1 Maximum: 32
timeout	Yes	Integer	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 delay . Minimum: 1 Maximum: 50

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Specifies the health check protocol. The value can be TCP, UDP_CONNECT, HTTP, HTTPS, gRPC, or TLS.</p> <p>Note:</p> <ul style="list-style-type: none"> • If the protocol of the backend server is QUIC, the value can only be UDP_CONNECT. • If the protocol of the backend server is UDP, the value can only be UDP_CONNECT. • If the protocol of the backend server is TCP, the value can only be TCP, HTTP or HTTPS. • If the protocol of the backend server is HTTP, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is HTTPS, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is gRPC, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is TLS, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. <p>QUIC protocol is not supported.</p>

Parameter	Mandatory	Type	Description
url_path	No	String	<p>Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /. The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set <code>_~!()*[]@\$^:'+,</code>.</p> <p>Note: This parameter is available only when type is set to HTTP or HTTPS.</p> <p>Default: /</p> <p>Minimum: 1</p> <p>Maximum: 80</p>

Response Parameters

Status code: 201

Table 4-348 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
healthmonitor	HealthMonitor object	Specifies the health check.

Table 4-349 HealthMonitor

Parameter	Type	Description
admin_state_up	Boolean	<p>Specifies the administrative status of the health check.</p> <ul style="list-style-type: none">● true(default) indicates that the health check is enabled.● false indicates that the health check is disabled.

Parameter	Type	Description
delay	Integer	Specifies the interval between health checks, in seconds. The value ranges from 1 to 50 . Minimum: 1 Maximum: 50
domain_name	String	Specifies the domain name that HTTP requests are sent to during the health check. The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter. 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. This parameter is available only when type is set to HTTP .
expected_codes	String	Specifies the expected HTTP status code. This parameter will take effect only when type is set to HTTP , HTTPS or gRPC . The value options are as follows: <ul style="list-style-type: none">• A specific value, for example, 200• A list of values that are separated with commas (,), for example, 200, 202• A value range, for example, 200-204 If type is set to gRPC , the default value is 0 . If type is set to other protocols, the default value is 200 .
http_method	String	Specifies the HTTP method. The value can be GET , HEAD , POST , PUT , DELETE , TRACE , OPTIONS , CONNECT , or PATCH . The default value is GET . This parameter is available when type is set to HTTP or HTTPS . This parameter is unsupported. Please do not use it.
id	String	Specifies the health check ID.
max_retries	Integer	Specifies the number of consecutive health checks when the health check result of a backend server changes from OFFLINE to ONLINE . The value ranges from 1 to 10 Minimum: 1 Maximum: 10

Parameter	Type	Description
max_retries_down	Integer	Specifies the number of consecutive health checks when the health check result of a backend server changes from ONLINE to OFFLINE . The value ranges from 1 to 10 , and the default value is 3 . Minimum: 1 Maximum: 10
monitor_port	Integer	Specifies the port used for the health check. If this parameter is left blank, a port of the backend server will be used by default. The port number ranges from 1 to 65535. Minimum: 1 Maximum: 65535
name	String	Specifies the health check name.
pools	Array of PoolRef objects	Lists the IDs of backend server groups for which the health check is configured. Only one ID will be returned.
project_id	String	Specifies the project ID.
timeout	Integer	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 delay . Minimum: 1 Maximum: 50

Parameter	Type	Description
type	String	<p>Specifies the health check protocol. The value can be TCP, UDP_CONNECT, HTTP, HTTPS, gRPC or TLS.</p> <p>Note:</p> <ul style="list-style-type: none"> • If the protocol of the backend server is QUIC, the value can only be UDP_CONNECT. • If the protocol of the backend server is UDP, the value can only be UDP_CONNECT. • If the protocol of the backend server is TCP, the value can only be TCP, HTTP or HTTPS. • If the protocol of the backend server is HTTP, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is HTTPS, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is gRPC, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is TLS, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. <p>QUIC protocol is not supported.</p>
url_path	String	<p>Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /. The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set <code>_~!()*[]@\$^: ',+.</code></p> <p>Note: This parameter is available only when type is set to HTTP or HTTPS.</p>
created_at	String	<p>Specifies the time when the health check was configured. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>
updated_at	String	<p>Specifies the time when the health check was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>

Table 4-350 PoolRef

Parameter	Type	Description
id	String	Specifies the ID of the backend server group.

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 2: Configuring a health check for an IP backend server group

```
{
  "healthmonitor" : {
    "name" : "My Healthmonitor",
    "max_retries" : 3,
    "pool_id" : "488acc50-6bcf-423d-8f0a-0f4184f5b8a0",
    "type" : "HTTP",
    "timeout" : 30,
    "delay" : 1,
    "port" : 80
  }
}
```

Example Responses

Status code: 201

Normal response to POST requests.

```
{
  "request_id" : "0e837340-f1bd-4037-8f61-9923d0f0b19e",
  "healthmonitor" : {
    "monitor_port" : null,
    "id" : "c2b210b2-60c4-449d-91e2-9e9ea1dd7441",
    "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
    "domain_name" : null,
    "name" : "My Healthmonitor",
    "delay" : 1,
    "max_retries" : 3,
    "pools" : [ {
      "id" : "488acc50-6bcf-423d-8f0a-0f4184f5b8a0"
    } ],
    "admin_state_up" : true,
    "timeout" : 30,
    "type" : "HTTP",
    "expected_codes" : "200",
    "url_path" : "/",
    "http_method" : "GET"
  }
}
```

Status Codes

Status Code	Description
201	Normal response to POST requests.

Error Codes

See [Error Codes](#).

4.13.2 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 4-351 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-352 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the last record on the previous page. Note: <ul style="list-style-type: none">• This parameter must be used together with limit.• If this parameter is not specified, the first page will be queried.• This parameter cannot be left blank or set to an invalid ID.
limit	No	Integer	Specifies the number of records on each page. Minimum: 0 Maximum: 2000 Default: 2000
page_reverse	No	Boolean	Specifies whether to use reverse query. Values: <ul style="list-style-type: none">• true: Query the previous page.• false (default): Query the next page. Note: <ul style="list-style-type: none">• This parameter must be used together with limit.• If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker.
id	No	Array	Specifies the health check ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> .
monitor_port	No	Array	Specifies the port used for the health check. Multiple ports can be queried in the format of <i>monitor_port=xxx&monitor_port=xxx</i> .

Parameter	Mandatory	Type	Description
domain_name	No	Array	Specifies the domain name to which HTTP requests are sent during the health check. The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter. Multiple domain names can be queried in the format of <i>domain_name=xxx&domain_name=xxx</i> .
name	No	Array	Specifies the health check name. Multiple names can be queried in the format of <i>name=xxx&name=xxx</i> .
delay	No	Array	Specifies the interval between health checks, in seconds. The value ranges from 1 to 50 . Multiple intervals can be queried in the format of <i>delay=xxx&delay=xxx</i> .
max_retries	No	Array	Specifies the number of consecutive health checks when the health check result of a backend server changes from OFFLINE to ONLINE . Multiple values can be queried in the format of <i>max_retries=xxx&max_retries=xxx</i> .
admin_state_up	No	Boolean	Specifies the administrative status of the health check. The value can be true (health check is enabled) or false (health check is disabled).

Parameter	Mandatory	Type	Description
max_retries_down	No	Array	Specifies the number of consecutive health checks when the health check result of a backend server changes from ONLINE to OFFLINE . The value ranges from 1 to 10 . Multiple values can be queried in the format of <i>max_retries_down=xxx&max_retries_down=xxx</i> .
timeout	No	Integer	Specifies the maximum time required for waiting for a response from the health check, in seconds.
type	No	Array	Specifies the health check protocol. The value can be TCP , UDP_CONNECT , HTTP , HTTPS , TLS , or gRPC . Multiple protocols can be queried in the format of <i>type=xxx&type=xxx</i> .
expected_codes	No	Array	Specifies the expected HTTP status code. This parameter will take effect only when type is set to HTTP , HTTPS , or gRPC . The value options are as follows: <ul style="list-style-type: none">• A specific value, for example, 200• A list of values that are separated with commas (,), for example, 200, 202• A value range, for example, 200-204 The default value is 200 . Multiple status codes can be queried in the format of <i>expected_codes=xxx&expected_codes=xxx</i> .

Parameter	Mandatory	Type	Description
url_path	No	Array	<p>Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /. This parameter is available only when type is set to HTTP.</p> <p>Multiple paths can be queried in the format of <i>url_path=xxx&url_path=xxx</i>.</p>
http_method	No	Array	<p>Specifies the HTTP method. The value can be GET, HEAD, POST, PUT, DELETE, TRACE, OPTIONS, CONNECT, or PATCH.</p> <p>Multiple methods can be queried in the format of <i>http_method=xxx&http_method=xxx</i>.</p> <p>This parameter is unsupported. Please do not use it.</p>
enterprise_project_id	No	Array	<p>Specifies the enterprise project ID.</p> <ul style="list-style-type: none"> • If this parameter is not passed, resources in the default enterprise project are queried, and authentication is performed based on the default enterprise project. • If this parameter is passed, its value can be the ID of an existing enterprise project (resources in the specific enterprise project are required) or all_granted_eps (resources in all enterprise projects are queried). <p>Multiple IDs can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p>

Request Parameters

Table 4-353 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-354 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
page_info	PageInfo object	Shows pagination information.
healthmonitors	Array of HealthMonitor objects	Specifies the health check.

Table 4-355 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

Table 4-356 HealthMonitor

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the health check. <ul style="list-style-type: none"> • true(default) indicates that the health check is enabled. • false indicates that the health check is disabled.
delay	Integer	Specifies the interval between health checks, in seconds. The value ranges from 1 to 50 . Minimum: 1 Maximum: 50
domain_name	String	Specifies the domain name that HTTP requests are sent to during the health check. The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter. 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. This parameter is available only when type is set to HTTP .
expected_codes	String	Specifies the expected HTTP status code. This parameter will take effect only when type is set to HTTP , HTTPS or gRPC . The value options are as follows: <ul style="list-style-type: none"> • A specific value, for example, 200 • A list of values that are separated with commas (,), for example, 200, 202 • A value range, for example, 200-204 If type is set to gRPC , the default value is 0 . If type is set to other protocols, the default value is 200 .
http_method	String	Specifies the HTTP method. The value can be GET , HEAD , POST , PUT , DELETE , TRACE , OPTIONS , CONNECT , or PATCH . The default value is GET . This parameter is available when type is set to HTTP or HTTPS . This parameter is unsupported. Please do not use it.
id	String	Specifies the health check ID.

Parameter	Type	Description
max_retries	Integer	Specifies the number of consecutive health checks when the health check result of a backend server changes from OFFLINE to ONLINE . The value ranges from 1 to 10 Minimum: 1 Maximum: 10
max_retries_down	Integer	Specifies the number of consecutive health checks when the health check result of a backend server changes from ONLINE to OFFLINE . The value ranges from 1 to 10 , and the default value is 3 . Minimum: 1 Maximum: 10
monitor_port	Integer	Specifies the port used for the health check. If this parameter is left blank, a port of the backend server will be used by default. The port number ranges from 1 to 65535. Minimum: 1 Maximum: 65535
name	String	Specifies the health check name.
pools	Array of PoolRef objects	Lists the IDs of backend server groups for which the health check is configured. Only one ID will be returned.
project_id	String	Specifies the project ID.
timeout	Integer	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 delay . Minimum: 1 Maximum: 50

Parameter	Type	Description
type	String	<p>Specifies the health check protocol. The value can be TCP, UDP_CONNECT, HTTP, HTTPS, gRPC or TLS.</p> <p>Note:</p> <ul style="list-style-type: none"> • If the protocol of the backend server is QUIC, the value can only be UDP_CONNECT. • If the protocol of the backend server is UDP, the value can only be UDP_CONNECT. • If the protocol of the backend server is TCP, the value can only be TCP, HTTP or HTTPS. • If the protocol of the backend server is HTTP, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is HTTPS, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is gRPC, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is TLS, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. <p>QUIC protocol is not supported.</p>
url_path	String	<p>Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /. The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set <code>_~!()*[]@\$^: ',+.</code></p> <p>Note: This parameter is available only when type is set to HTTP or HTTPS.</p>
created_at	String	<p>Specifies the time when the health check was configured. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>
updated_at	String	<p>Specifies the time when the health check was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>

Table 4-357 PoolRef

Parameter	Type	Description
id	String	Specifies the ID of the backend server group.

Example Requests

Querying health checks

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

Example Responses

Status code: 200

Successful request.

```
{
  "healthmonitors" : [ {
    "monitor_port" : null,
    "id" : "c2b210b2-60c4-449d-91e2-9e9ea1dd7441",
    "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
    "domain_name" : null,
    "name" : "My Healthmonitor update",
    "delay" : 10,
    "max_retries" : 10,
    "pools" : [ {
      "id" : "488acc50-6bcf-423d-8f0a-0f4184f5b8a0"
    } ],
    "admin_state_up" : true,
    "timeout" : 30,
    "type" : "HTTP",
    "expected_codes" : "200",
    "url_path" : "/",
    "http_method" : "GET"
  }, {
    "monitor_port" : null,
    "id" : "cda1af03-0660-4fd2-8edf-e38c79846e08",
    "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
    "domain_name" : "akik.un.com",
    "name" : "lijunqiu",
    "delay" : 50,
    "max_retries" : 1,
    "pools" : [ {
      "id" : "ae6e45ba-be84-4074-8ac6-bc4a56484809"
    } ],
    "admin_state_up" : false,
    "timeout" : 3,
    "type" : "UDP_CONNECT",
    "expected_codes" : null,
    "url_path" : "/world",
    "http_method" : null
  } ],
  "page_info" : {
    "next_marker" : "cda1af03-0660-4fd2-8edf-e38c79846e08",
    "previous_marker" : "c2b210b2-60c4-449d-91e2-9e9ea1dd7441",
    "current_count" : 2
  },
  "request_id" : "814bc40e-8b0a-4ced-b8e5-f136c3e1df6a"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.13.3 Viewing Details of a Health Check

Function

This API is used to view details of a health check.

Calling Method

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

URI

GET /v3/{project_id}/elb/healthmonitors/{healthmonitor_id}

Table 4-358 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
healthmonitor_id	Yes	String	Specifies the health check ID.

Request Parameters

Table 4-359 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-360 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
healthmonitor	HealthMonitor object	Specifies the health check.

Table 4-361 HealthMonitor

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the health check. <ul style="list-style-type: none">• true(default) indicates that the health check is enabled.• false indicates that the health check is disabled.
delay	Integer	Specifies the interval between health checks, in seconds. The value ranges from 1 to 50 . Minimum: 1 Maximum: 50
domain_name	String	Specifies the domain name that HTTP requests are sent to during the health check. The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter. 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. This parameter is available only when type is set to HTTP .
expected_codes	String	Specifies the expected HTTP status code. This parameter will take effect only when type is set to HTTP , HTTPS or gRPC . The value options are as follows: <ul style="list-style-type: none">• A specific value, for example, 200• A list of values that are separated with commas (,), for example, 200, 202• A value range, for example, 200-204 If type is set to gRPC , the default value is 0 . If type is set to other protocols, the default value is 200 .

Parameter	Type	Description
http_method	String	Specifies the HTTP method. The value can be GET , HEAD , POST , PUT , DELETE , TRACE , OPTIONS , CONNECT , or PATCH . The default value is GET . This parameter is available when type is set to HTTP or HTTPS . This parameter is unsupported. Please do not use it.
id	String	Specifies the health check ID.
max_retries	Integer	Specifies the number of consecutive health checks when the health check result of a backend server changes from OFFLINE to ONLINE . The value ranges from 1 to 10 Minimum: 1 Maximum: 10
max_retries_down	Integer	Specifies the number of consecutive health checks when the health check result of a backend server changes from ONLINE to OFFLINE . The value ranges from 1 to 10 , and the default value is 3 . Minimum: 1 Maximum: 10
monitor_port	Integer	Specifies the port used for the health check. If this parameter is left blank, a port of the backend server will be used by default. The port number ranges from 1 to 65535. Minimum: 1 Maximum: 65535
name	String	Specifies the health check name.
pools	Array of PoolRef objects	Lists the IDs of backend server groups for which the health check is configured. Only one ID will be returned.
project_id	String	Specifies the project ID.
timeout	Integer	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 delay . Minimum: 1 Maximum: 50

Parameter	Type	Description
type	String	<p>Specifies the health check protocol. The value can be TCP, UDP_CONNECT, HTTP, HTTPS, gRPC or TLS.</p> <p>Note:</p> <ul style="list-style-type: none"> • If the protocol of the backend server is QUIC, the value can only be UDP_CONNECT. • If the protocol of the backend server is UDP, the value can only be UDP_CONNECT. • If the protocol of the backend server is TCP, the value can only be TCP, HTTP or HTTPS. • If the protocol of the backend server is HTTP, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is HTTPS, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is gRPC, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is TLS, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. <p>QUIC protocol is not supported.</p>
url_path	String	<p>Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /. The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set <code>_~!()*[]@\$^: ',+.</code></p> <p>Note: This parameter is available only when type is set to HTTP or HTTPS.</p>
created_at	String	<p>Specifies the time when the health check was configured. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>
updated_at	String	<p>Specifies the time when the health check was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>

Table 4-362 PoolRef

Parameter	Type	Description
id	String	Specifies the ID of the backend server group.

Example Requests

Querying 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" : {
    "monitor_port" : null,
    "id" : "c2b210b2-60c4-449d-91e2-9e9ea1dd7441",
    "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
    "domain_name" : null,
    "name" : "My Healthmonitor update",
    "delay" : 10,
    "max_retries" : 10,
    "pools" : [ {
      "id" : "488acc50-6bcf-423d-8f0a-0f4184f5b8a0"
    } ],
    "admin_state_up" : true,
    "timeout" : 30,
    "type" : "HTTP",
    "expected_codes" : "200",
    "url_path" : "/",
    "http_method" : "GET"
  },
  "request_id" : "3702e8f0-f5f0-4d35-9097-fc7160005fae"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.13.4 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 4-363 Path Parameters

Parameter	Mandatory	Type	Description
healthmonitor_id	Yes	String	Specifies the health check ID.
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-364 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-365 Request body parameters

Parameter	Mandatory	Type	Description
healthmonitor	Yes	UpdateHealthMonitorOption object	Specifies the health check.

Table 4-366 UpdateHealthMonitorOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	<p>Specifies the administrative status of the health check.</p> <ul style="list-style-type: none"> • true (default): Health check is enabled. • false: Health check is disabled.
delay	No	Integer	<p>Specifies the interval between health checks, in seconds. The value ranges from 1 to 50.</p> <p>Minimum: 1 Maximum: 50</p>
domain_name	No	String	<p>Specifies the domain name that HTTP requests are sent to during the health check.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter.</p> <p>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.</p> <p>This parameter is available only when type is set to HTTP.</p> <p>Minimum: 1 Maximum: 100</p>

Parameter	Mandatory	Type	Description
expected_codes	No	String	<p>Specifies the expected HTTP status code. This parameter will take effect only when type is set to HTTP, HTTPS, or gRPC.</p> <p>The value options are as follows:</p> <ul style="list-style-type: none"> • A specific value, for example, 200 • A list of values that are separated with commas (,), for example, 200, 202 • A value range, for example, 200-204 <p>Minimum: 1 Maximum: 64</p>
http_method	No	String	<p>Specifies the HTTP method. The value can be GET, HEAD, POST, PUT, DELETE, TRACE, OPTIONS, CONNECT, or PATCH.</p> <p>This parameter will take effect only when type is set to HTTP.</p> <p>This parameter is unsupported. Please do not use it.</p> <p>Minimum: 1 Maximum: 16</p>
max_retries	No	Integer	<p>Specifies the number of consecutive health checks when the health check result of a backend server changes from OFFLINE to ONLINE.</p> <p>The value ranges from 1 to 10</p> <p>Minimum: 1 Maximum: 10</p>

Parameter	Mandatory	Type	Description
max_retries_down	No	Integer	Specifies the number of consecutive health checks when the health check result of a backend server changes from ONLINE to OFFLINE . The value ranges from 1 to 10 . Minimum: 1 Maximum: 10
monitor_port	No	Integer	Specifies the port used for the health check. This parameter cannot be left blank, but can be set to null , indicating that the port used by the backend server will be used. Minimum: 1 Maximum: 65535
name	No	String	Specifies the health check name. Minimum: 0 Maximum: 255
timeout	No	Integer	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 delay . Minimum: 1 Maximum: 50

Parameter	Mandatory	Type	Description
url_path	No	String	<p>Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /. The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set <code>_~!()*[]@\$^:'+,.</code></p> <p>Note: This parameter is available only when type is set to HTTP or HTTPS.</p> <p>Minimum: 1 Maximum: 80</p>

Parameter	Mandatory	Type	Description
type	No	String	<p>Specifies the health check protocol. The value can be TCP, UDP_CONNECT, HTTP, HTTPS, gRPC or TLS.</p> <p>Note:</p> <ul style="list-style-type: none"> • If the protocol of the backend server is QUIC, the value can only be UDP_CONNECT. • If the protocol of the backend server is UDP, the value can only be UDP_CONNECT. • If the protocol of the backend server is TCP, the value can only be TCP, HTTP or HTTPS. • If the protocol of the backend server is HTTP, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is HTTPS, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is gRPC, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is TLS, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. <p>QUIC protocol is not supported.</p>

Response Parameters

Status code: 200

Table 4-367 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
healthmonitor	HealthMonitor object	Specifies the health check.

Table 4-368 HealthMonitor

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the health check. <ul style="list-style-type: none">• true(default) indicates that the health check is enabled.• false indicates that the health check is disabled.
delay	Integer	Specifies the interval between health checks, in seconds. The value ranges from 1 to 50 . Minimum: 1 Maximum: 50
domain_name	String	Specifies the domain name that HTTP requests are sent to during the health check. The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter. 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. This parameter is available only when type is set to HTTP .
expected_codes	String	Specifies the expected HTTP status code. This parameter will take effect only when type is set to HTTP , HTTPS or gRPC . The value options are as follows: <ul style="list-style-type: none">• A specific value, for example, 200• A list of values that are separated with commas (,), for example, 200, 202• A value range, for example, 200-204 If type is set to gRPC , the default value is 0 . If type is set to other protocols, the default value is 200 .

Parameter	Type	Description
http_method	String	Specifies the HTTP method. The value can be GET , HEAD , POST , PUT , DELETE , TRACE , OPTIONS , CONNECT , or PATCH . The default value is GET . This parameter is available when type is set to HTTP or HTTPS . This parameter is unsupported. Please do not use it.
id	String	Specifies the health check ID.
max_retries	Integer	Specifies the number of consecutive health checks when the health check result of a backend server changes from OFFLINE to ONLINE . The value ranges from 1 to 10 Minimum: 1 Maximum: 10
max_retries_own	Integer	Specifies the number of consecutive health checks when the health check result of a backend server changes from ONLINE to OFFLINE . The value ranges from 1 to 10 , and the default value is 3 . Minimum: 1 Maximum: 10
monitor_port	Integer	Specifies the port used for the health check. If this parameter is left blank, a port of the backend server will be used by default. The port number ranges from 1 to 65535. Minimum: 1 Maximum: 65535
name	String	Specifies the health check name.
pools	Array of PoolRef objects	Lists the IDs of backend server groups for which the health check is configured. Only one ID will be returned.
project_id	String	Specifies the project ID.
timeout	Integer	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 delay . Minimum: 1 Maximum: 50

Parameter	Type	Description
type	String	<p>Specifies the health check protocol. The value can be TCP, UDP_CONNECT, HTTP, HTTPS, gRPC or TLS.</p> <p>Note:</p> <ul style="list-style-type: none"> • If the protocol of the backend server is QUIC, the value can only be UDP_CONNECT. • If the protocol of the backend server is UDP, the value can only be UDP_CONNECT. • If the protocol of the backend server is TCP, the value can only be TCP, HTTP or HTTPS. • If the protocol of the backend server is HTTP, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is HTTPS, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is gRPC, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. • If the protocol of the backend server is TLS, the value can only be TCP, HTTP, HTTPS, gRPC or TLS. <p>QUIC protocol is not supported.</p>
url_path	String	<p>Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /. The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set <code>_~!()*[]@\$^:'.+,</code>.</p> <p>Note: This parameter is available only when type is set to HTTP or HTTPS.</p>
created_at	String	<p>Specifies the time when the health check was configured. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>
updated_at	String	<p>Specifies the time when the health check was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>

Table 4-369 PoolRef

Parameter	Type	Description
id	String	Specifies the ID of the backend server group.

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" : "08d6ffea-d092-4cfa-860a-e364f3bef1be",  
  "healthmonitor" : {  
    "monitor_port" : null,  
    "id" : "c2b210b2-60c4-449d-91e2-9e9ea1dd7441",  
    "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",  
    "domain_name" : null,  
    "name" : "My Healthmonitor update",  
    "delay" : 10,  
    "max_retries" : 10,  
    "pools" : [ {  
      "id" : "488acc50-6bcf-423d-8f0a-0f4184f5b8a0"  
    } ],  
    "admin_state_up" : true,  
    "timeout" : 30,  
    "type" : "HTTP",  
    "expected_codes" : "200",  
    "url_path" : "/",  
    "http_method" : "GET"  
  }  
}
```

Status Codes

Status Code	Description
200	Successful request.
400	Invalid request body or request parameters.
403	Failed to verify the token.
404	The queried resource does not exist.

Status Code	Description
409	A conflict occurred.
431	The request headers are too large.
494	The request header or cookie is too large.
500	A service error occurred.

Error Codes

See [Error Codes](#).

4.13.5 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 4-370 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
healthmonitor_id	Yes	String	Specifies the health check ID.

Request Parameters

Table 4-371 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

None

Example Requests

Deleting a health check

```
DELETE https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/healthmonitors/  
c2b210b2-60c4-449d-91e2-9e9ea1dd7441
```

Example Responses

None

Status Codes

Status Code	Description
204	Successful request.

Error Codes

See [Error Codes](#).

4.14 Forwarding Policy

4.14.1 Adding a Forwarding Policy

Function

This API is used to add a forwarding policy to a listener.

Constraints

Forwarding policies can be added to only to HTTP or HTTPS listeners.

Calling Method

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

URI

POST /v3/{project_id}/elb/l7policies

Table 4-372 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-373 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-374 Request body parameters

Parameter	Mandatory	Type	Description
l7policy	Yes	CreateL7PolicyOption object	Specifies the forwarding policy.

Table 4-375 CreateL7PolicyOption

Parameter	Mandatory	Type	Description
action	Yes	String	<p>Specifies where requests will be forwarded. The value can be one of the following:</p> <ul style="list-style-type: none">• REDIRECT_TO_POOL: Requests will be forwarded to another backend server group.• REDIRECT_TO_LISTENER: Requests will be redirected to an HTTPS listener.• REDIRECT_TO_URL: Requests will be redirected to another URL.• FIXED_RESPONSE: A fixed response body will be returned. <p>REDIRECT_TO_LISTENER has the highest priority. If requests are to be redirected to an HTTPS listener, other forwarding policies of the listener will become invalid.</p> <p>Note:</p> <ul style="list-style-type: none">• If action is set to REDIRECT_TO_POOL, the listener's protocol must be HTTP or HTTPS.• If action is set to REDIRECT_TO_LISTENER, the listener's protocol must be HTTP. <p>Minimum: 1 Maximum: 255</p>
admin_state_up	No	Boolean	<p>Specifies the administrative status of the forwarding policy. The default value is true.</p> <p>This parameter is unsupported. Please do not use it.</p>

Parameter	Mandatory	Type	Description
description	No	String	Provides supplementary information about the forwarding policy. Minimum: 0 Maximum: 255
listener_id	Yes	String	Specifies the ID of the listener to which the forwarding policy is added. <ul style="list-style-type: none"> • If action is set to REDIRECT_TO_POOL, the forwarding policy can be added to an HTTP or HTTPS listener. • If action is set to REDIRECT_TO_LISTENER, the forwarding policy can be added to an HTTP listener.
name	No	String	Specifies the forwarding policy name. Minimum: 0 Maximum: 255
position	No	Integer	Specifies the forwarding policy priority. The value cannot be updated. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 100

Parameter	Mandatory	Type	Description
priority	No	Integer	<p>Specifies the forwarding policy priority. A smaller value indicates a higher priority. The value must be unique for forwarding policies of the same listener. This parameter will take effect only when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned. This parameter is unsupported for shared load balancers.</p> <ul style="list-style-type: none"> • If action is set to REDIRECT_TO_LISTENER, the value can only be 0, indicating REDIRECT_TO_LISTENER has the highest priority. • If enhance_l7policy_enable is not enabled, 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 (EQUAL_TO), prefix match (STARTS_WITH), and regular expression match (REGEX). If the matching types are the same, the longer the URL 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. • If enhance_l7policy_enable is set to true and this parameter is not passed,

Parameter	Mandatory	Type	Description
			<p>the priority will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. If the highest priority of existing forwarding policies is the maximum (10,000), the forwarding policy will fail to be created because the final priority for creating the forwarding policy is the sum of 1 and 10,000, which exceeds the maximum. In this case, specify a value or adjust the priorities of existing forwarding policies. If no forwarding policies exist, the highest priority of existing forwarding policies will be set to 1 by default.</p> <p>Minimum: 0 Maximum: 10000</p>
project_id	No	String	<p>Specifies the ID of the project where the forwarding policy is used.</p> <p>Minimum: 1 Maximum: 32</p>
redirect_listener_id	No	String	<p>Specifies the ID of the listener to which requests are redirected. This parameter is mandatory when action is set to REDIRECT_TO_LISTENER.</p> <p>Note:</p> <ul style="list-style-type: none"> • The listener's protocol must be HTTPS. • A listener added to another load balancer is not allowed. • This parameter cannot be passed in the API for adding or updating a forwarding policy if action is set to REDIRECT_TO_POOL.

Parameter	Mandatory	Type	Description
redirect_pool_id	No	String	Specifies the ID of the backend server group to which the requests are forwarded. This parameter is valid only when action is set to REDIRECT_TO_POOL . Note: <ul style="list-style-type: none">• If action is set to REDIRECT_TO_POOL, specify either redirect_pool_id or redirect_pools_config. If both are specified, only redirect_pools_config takes effect.• This parameter cannot be specified when action is set to REDIRECT_TO_LISTENER.
redirect_url	No	String	Specifies the URL to which requests are forwarded. Format: <i>protocol://host:port/path?query</i> Minimum: 1 Maximum: 255

Parameter	Mandatory	Type	Description
redirect_url_config	No	CreateRedirectUrlConfig object	<p>Specifies the URL to which requests are forwarded.</p> <p>For dedicated load balancers, this parameter will take effect only when advanced forwarding is enabled (enhance_l7policy_enable is set to true). If it is passed when enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to REDIRECT_TO_URL. It cannot be specified if the value of action is not REDIRECT_TO_URL.</p> <p>Format: <i>protocol://host:port/path?query</i></p> <p>At least one of the four parameters (protocol, host, port, and path) must be passed, or their values cannot be set to \${xxx} at the same time. (\${xxx} indicates that the value in the request will be inherited. For example, \${host} indicates the host in the URL to be redirected.)</p> <p>The values of protocol and port cannot be the same as those of the associated listener, and either host or path must be passed or their values cannot be \${xxx} at the same time.</p>

Parameter	Mandatory	Type	Description
fixed_response_config	No	CreateFixedResponseConfig object	Specifies the configuration of the page that will be returned. This parameter will take effect when enhance_l7policy_enable is set to true . If this parameter is passed and enhance_l7policy_enable is set to false , an error will be returned. This parameter is mandatory when action is set to FIXED_RESPONSE . It cannot be specified if the value of action is not FIXED_RESPONSE .
redirect_pools_extend_config	No	CreateRedirectPoolsExtendConfig object	Specifies the backend server group that the requests are forwarded to. This parameter is valid only when action is set to REDIRECT_TO_POOL .
rules	No	Array of CreateL7PolicyRuleOption objects	Lists the forwarding rules in the forwarding policy. The list can contain a maximum of 10 forwarding rules (if conditions is specified, a condition is considered as a rule). If type is set to HOST_NAME , PATH , METHOD , or SOURCE_IP , only one forwarding rule can be created for each type. Note: <ul style="list-style-type: none"> • The entire list will be replaced if you update it. • If the action of l7policy is set to Redirect to another listener, l7rule cannot be created.

Table 4-376 CreateRedirectUrlConfig

Parameter	Mandatory	Type	Description
protocol	No	String	<p>Specifies the protocol for redirection.</p> <p>The value can be HTTP, HTTPS, or `\${protocol}`. The default value is `\${protocol}`, indicating that the protocol of the request will be used.</p> <p>Default: `\${protocol}`</p> <p>Minimum: 1</p> <p>Maximum: 36</p>
host	No	String	<p>Specifies the host name that requests are redirected to. The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. The default value is `\${host}`, indicating that the host of the request will be used.</p> <p>Default: `\${host}`</p> <p>Minimum: 1</p> <p>Maximum: 128</p>
port	No	String	<p>Specifies the port that requests are redirected to. The default value is `\${port}`, indicating that the port of the request will be used.</p> <p>Default: `\${port}`</p> <p>Minimum: 1</p> <p>Maximum: 16</p>
path	No	String	<p>Specifies the path that requests are redirected to. The default value is `\${path}`, indicating that the path of the request will be used.</p> <p>The value can contain only letters, digits, and special characters <code>_~!;@^-%#&\$.*+?=: /()[]{}</code> and must start with a slash (/).</p> <p>Default: `\${path}`</p> <p>Minimum: 1</p> <p>Maximum: 128</p>

Parameter	Mandatory	Type	Description
query	No	String	<p>Specifies the query string set in the URL for redirection. The default value is #{query}, indicating that the query string of the request will be used.</p> <p>For example, in the URL https://www.example.com:8080/elb?type=loadbalancer, #{query} indicates type=loadbalancer. If this parameter is set to #{query}&name=my_name, the URL will be redirected to https://www.example.com:8080/elb?type=loadbalancer&name=my_name.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters <code>!\$&'()*+,-./:;=?@^_`</code></p> <p>Default: #{query} Minimum: 0 Maximum: 128</p>
status_code	Yes	String	<p>Specifies the status code returned after the requests are redirected.</p> <p>The value can be 301, 302, 303, 307, or 308.</p> <p>Minimum: 1 Maximum: 16</p>
insert_headers_config	No	CreateInsertHeadersConfig object	Specifies the headers you want to write into the request that matches the condition.
remove_headers_config	No	CreateRemoveHeadersConfig object	Specifies the headers you want to remove from the request that matches the condition.

Table 4-377 CreateInsertHeadersConfig

Parameter	Mandatory	Type	Description
configs	Yes	Array of CreateInsertHeaderConfig objects	Specifies the headers you want to write into the request that matches the condition.

Table 4-378 CreateInsertHeaderConfig

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the key of the header you want to write into the request that matches the condition. The value is a string of 1 to 40 case-insensitive characters. Only letters, digits, hyphens (-), and underscores (_) are allowed. The key cannot be the following: 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.
value_type	Yes	String	Specifies the value type. The value can be USER_DEFINED , REFERENCE_HEADER , or SYSTEM_DEFINED .

Parameter	Mandatory	Type	Description
value	Yes	String	<p>Specifies the value of the header. If value_type is set to SYSTEM_DEFINED, the value can be CLIENT-PORT, CLIENT-IP, ELB-PROTOCOL, ELB-ID, ELB-PORT, ELB-EIP, or ELB-VIP.</p> <p>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>

Table 4-379 CreateRemoveHeadersConfig

Parameter	Mandatory	Type	Description
configs	Yes	Array of CreateRemoveHeaderConfig objects	Specifies the headers you want to remove from the request that matches the condition.

Table 4-380 CreateRemoveHeaderConfig

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the key of the header you want to remove from the request that matches the condition. The value is a string of 1 to 40 case-insensitive characters. Only letters, digits, hyphens (-), and underscores (_) are allowed. The key cannot be the following: 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.

Table 4-381 CreateFixedResponseConfig

Parameter	Mandatory	Type	Description
status_code	Yes	String	Specifies the fixed HTTP status code configured in the forwarding rule. The value can be any integer in the range of 200–299, 400–499, or 500–599. Minimum: 1 Maximum: 16

Parameter	Mandatory	Type	Description
content_type	No	String	Specifies the format of the response body. The value can be text/plain , text/css , text/html , application/javascript , or application/json . The default value is text/plain . Minimum: 0 Maximum: 32
message_body	No	String	Specifies the content of the response message body. Minimum: 0 Maximum: 1024

Table 4-382 CreateRedirectPoolsExtendConfig

Parameter	Mandatory	Type	Description
rewrite_url_enable	No	Boolean	Specifies whether to set rewrite_url_enable to true .
rewrite_url_config	No	CreateRewriteUrlConfig object	Specifies the URL for the backend server group that requests are forwarded to. This parameter is mandatory when rewrite_url_enable is set to true .

Table 4-383 CreateRewriteUrlConfig

Parameter	Mandatory	Type	Description
host	No	String	Specifies the rewritten host that requests are redirected to. The string can contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit. The default value is \${host} , indicating that the host of the request will be used.

Parameter	Mandatory	Type	Description
path	No	String	Specifies the path that requests are redirected to. The default value is #{path} , indicating that the path of the request will be used. The value can contain only letters, digits, and special characters <code>_~!;@^-%#&\$.+?,=:/\()</code> and must start with a slash (/). <i>\$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, #{path} is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, #{abc}#123, and the matching result is #123. If the dollar sign (\$) is followed by a special character, for example, #{#}, the matching result is #.</i>
query	No	String	Specifies the query string set in the URL for redirection. The default value is #{query} , indicating that the query string of the request will be used. The value is case-sensitive and can contain only letters, digits, and special characters <code>!\$&'()*+,-./:;=?@^_`</code> . <i>\$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, #{path} is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, #{abc}#123, and the matching result is #123. If the dollar sign (\$) is followed by a special character, for example, #{#}, the matching result is #.</i>

Table 4-384 CreateL7PolicyRuleOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	<p>Specifies the administrative status of the forwarding rule. The value can be true or false, and the default value is true.</p> <p>This parameter is unsupported. Please do not use it.</p> <p>Default: true</p>
type	Yes	String	<p>Specifies the type of the forwarding rule. The value can be one of the following:</p> <ul style="list-style-type: none">• HOST_NAME: A domain name will be used for matching.• PATH: A URL will be used for matching.• METHOD: An HTTP request method will be used for matching.• HEADER: The request header will be used for matching.• QUERY_STRING: A query string will be used for matching.• SOURCE_IP: The source IP address will be used for matching. <p>If type is set to HOST_NAME, PATH, METHOD, and SOURCE_IP, only one forwarding rule can be created for each type. If type is set to HEADER and QUERY_STRING, multiple forwarding rules can be created for each type.</p>

Parameter	Mandatory	Type	Description
compare_type	Yes	String	<p>Specifies how requests are matched with the forwarding rule. Values:</p> <ul style="list-style-type: none"> • EQUAL_TO: exact match. • REGEX: regular expression match • STARTS_WITH: prefix match <p>Note:</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, the value can only be EQUAL_TO, and asterisks (*) can be used as wildcard characters. • If type is set to PATH, the value can be REGEX, STARTS_WITH, or EQUAL_TO. • If type is set to METHOD or SOURCE_IP, the value can only be EQUAL_TO. • If type is set to HEADER or QUERY_STRING, the value can only be EQUAL_TO, asterisks (*) and question marks (?) can be used as wildcard characters.
invert	No	Boolean	<p>Specifies whether reverse matching is supported. The value can be true or false, and the default value is false.</p> <p>This parameter is unsupported. Please do not use it.</p> <p>Default: false</p>
key	No	String	<p>Specifies the key of the match item. For example, if an HTTP header is used for matching, key is the name of the HTTP header parameter.</p> <p>This parameter is unsupported. Please do not use it.</p> <p>Minimum: 1 Maximum: 255</p>

Parameter	Mandatory	Type	Description
value	Yes	String	<p>Specifies the value of the match item. For example, if a domain name is used for matching, value is the domain name. This parameter will take effect only when conditions is left blank.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, the value can contain letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. • If type is set to PATH and compare_type to STARTS_WITH or EQUAL_TO, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$. * +?,=!: \ () [] { }</code> • If type is set to METHOD, SOURCE_IP, HEADER, or QUERY_STRING, this parameter will not take effect, and conditions will be used to specify the key and value. <p>Minimum: 1 Maximum: 128</p>

Parameter	Mandatory	Type	Description
conditions	No	Array of CreateRuleCondition objects	<p>Specifies the conditions contained in a forwarding rule. This parameter will take effect when enhance_l7policy_enable is set to true.</p> <p>If conditions is specified, key and value will not take effect, and the value of this parameter will contain all conditions configured for the forwarding rule. The keys in the list must be the same, whereas each value must be unique.</p> <p>Array Length: 0 - 10</p>

Table 4-385 CreateRuleCondition

Parameter	Mandatory	Type	Description
key	No	String	<p>Specifies the key of match item.</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is left blank. If type is set to HEADER, key indicates the name of the HTTP header parameter. The value can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_). If type is set to QUERY_STRING, key indicates the name of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({ }), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. <p>All keys in the conditions list in the same rule must be the same.</p> <p>Minimum: 1 Maximum: 128</p>

Parameter	Mandatory	Type	Description
value	Yes	String	<p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (), <i>and must start with a letter, digit, or asterisk (^)</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~!;@^-%#&\$.*+? ,=!: /() [] {}</code> If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP 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 1 character. If type is set to QUERY_STRING, key indicates the name of the

Parameter	Mandatory	Type	Description
			<p>query parameter, and value 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 (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character.</p> <ul style="list-style-type: none"> • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value 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.] <p>All values of the condition list in a forwarding rule must be unique.</p> <p>Minimum: 1 Maximum: 128</p>

Response Parameters

Status code: 201

Table 4-386 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
l7policy	L7Policy object	Specifies the forwarding policy.

Table 4-387 L7Policy

Parameter	Type	Description
action	String	<p>Specifies where requests will be forwarded. The value can be one of the following:</p> <ul style="list-style-type: none">• REDIRECT_TO_POOL: Requests will be forwarded to another backend server group.• REDIRECT_TO_LISTENER: Requests will be redirected to an HTTPS listener. <p>REDIRECT_TO_LISTENER has the highest priority. If requests are to be redirected to an HTTPS listener, other forwarding policies of the listener will become invalid.</p> <p>Note:</p> <ul style="list-style-type: none">• If action is set to REDIRECT_TO_POOL, the listener's protocol must be HTTP, HTTPS, or TERMINATED_HTTPS.• If action is set to REDIRECT_TO_LISTENER, the listener's protocol must be HTTP.
admin_state_up	Boolean	<p>Specifies the administrative status of the forwarding policy. The default value is true.</p> <p>This parameter is unsupported. Please do not use it.</p>
description	String	Provides supplementary information about the forwarding policy.
id	String	Specifies the forwarding policy ID.
listener_id	String	Specifies the ID of the listener to which the forwarding policy is added.
name	String	<p>Specifies the forwarding policy name.</p> <p>Minimum: 1</p> <p>Maximum: 255</p>

Parameter	Type	Description
position	Integer	Specifies the forwarding policy priority. This parameter cannot be updated. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 100

Parameter	Type	Description
priority	Integer	<p>Specifies the forwarding policy priority. A smaller value indicates a higher priority. The value must be unique for forwarding policies of the same listener. This parameter will take effect only when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned. This parameter is unsupported for shared load balancers.</p> <ul style="list-style-type: none"> • If action is set to REDIRECT_TO_LISTENER, the value can only be 0, indicating REDIRECT_TO_LISTENER has the highest priority. • If enhance_l7policy_enable is not enabled, 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 (EQUAL_TO), prefix match (STARTS_WITH), and regular expression match (REGEX). If the matching types are the same, the longer the URL 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. • If enhance_l7policy_enable is set to true and this parameter is not passed, the priority will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. If the highest priority of existing forwarding policies is the maximum (10,000), the forwarding policy will fail to be created because the final priority for creating the forwarding policy is the sum of 1 and 10,000, which exceeds the maximum. In this case, specify a value or adjust the priorities of existing forwarding policies. If no forwarding policies exist, the highest priority of existing forwarding policies will be set to 1 by default.
project_id	String	Specifies the project ID of the forwarding policy.

Parameter	Type	Description
provisioning_status	String	Specifies the provisioning status of the forwarding policy. The value can be ACTIVE or ERROR . <ul style="list-style-type: none">• ACTIVE (default): The forwarding policy is provisioned successfully.
redirect_pool_id	String	Specifies the ID of the backend server group that requests will be forwarded to. <ul style="list-style-type: none">• This parameter is valid and mandatory only when action is set to REDIRECT_TO_POOL.• Either redirect_pools_config or redirect_pool_id needs to be specified. If both redirect_pools_config and redirect_pool_id are specified, redirect_pools_config will take effect.• If action is set to REDIRECT_TO_LISTENER, this parameter is unavailable.
redirect_listener_id	String	Specifies the ID of the listener to which requests are redirected. This parameter is mandatory when action is set to REDIRECT_TO_LISTENER . Note: <ul style="list-style-type: none">• The listener's protocol must be HTTPS or TERMINATED_HTTPS.• A listener added to another load balancer is not allowed.• This parameter cannot be passed in the API for adding or updating a forwarding policy if action is set to REDIRECT_TO_POOL.
redirect_url	String	Specifies the URL to which requests are forwarded. Format: <i>protocol://host:port/path?query</i> This parameter is unsupported. Please do not use it.
rules	Array of RuleRef objects	Lists the forwarding rules in the forwarding policy.

Parameter	Type	Description
redirect_url_config	RedirectUrlConfig object	<p>Specifies the URL to which requests are forwarded.</p> <p>For dedicated load balancers, this parameter will take effect only when advanced forwarding is enabled (enhance_l7policy_enable is set to true). If it is passed when enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to REDIRECT_TO_URL. It cannot be specified if the value of action is not REDIRECT_TO_URL.</p> <p>Format: <i>protocol://host:port/path?query</i></p> <p>At least one of the four parameters (protocol, host, port, and path) must be passed, or their values cannot be set to \${xxx} at the same time. (\${xxx} indicates that the value in the request will be inherited. For example, \${host} indicates the host in the URL to be redirected.)</p> <p>The values of protocol and port cannot be the same as those of the associated listener, and either host or path must be passed or their values cannot be \${xxx} at the same time.</p>
redirect_pools_extend_config	RedirectPoolsExtendConfig object	<p>Specifies the backend server group that the requests are forwarded to. This parameter is valid only when action is set to REDIRECT_TO_POOL.</p>
fixed_response_config	FixedResponseConfig object	<p>Specifies the configuration of the page that will be returned. This parameter will take effect when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to FIXED_RESPONSE. It cannot be specified if the value of action is not FIXED_RESPONSE.</p>
created_at	String	<p>Specifies the time when the forwarding policy was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>
updated_at	String	<p>Specifies the time when the forwarding policy was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>

Table 4-388 RuleRef

Parameter	Type	Description
id	String	Specifies the forwarding rule ID.

Table 4-389 RedirectUrlConfig

Parameter	Type	Description
protocol	String	Specifies the protocol for redirection. The value can be HTTP , HTTPS , or \${protocol} . The default value is \${protocol} , indicating that the protocol of the request will be used. Minimum: 1 Maximum: 36
host	String	Specifies the host name that requests are redirected to. The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. The default value is \${host} , indicating that the host of the request will be used. Default: \${host} Minimum: 1 Maximum: 128
port	String	Specifies the port that requests are redirected to. The default value is \${port} , indicating that the port of the request will be used. Default: \${port} Minimum: 1 Maximum: 16
path	String	Specifies the path that requests are redirected to. The default value is \${path} , indicating that the path of the request will be used. The value can contain only letters, digits, and special characters <code>_!;@^-%#&\$.*+?,=!: /()[]{} </code> and must start with a slash (/). Default: \${path} Minimum: 1 Maximum: 128

Parameter	Type	Description
query	String	<p>Specifies the query string set in the URL for redirection. The default value is {query}, indicating that the query string of the request will be used.</p> <p>For example, in the URL https://www.example.com:8080/elb?type=loadbalancer, {query} indicates type=loadbalancer. If this parameter is set to {query}&name=my_name, the URL will be redirected to https://www.example.com:8080/elb?type=loadbalancer&name=my_name.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters ! \$&'()*+,-./:;=?@^_`</p> <p>Default: {query}</p> <p>Minimum: 0</p> <p>Maximum: 128</p>
status_code	String	<p>Specifies the status code returned after the requests are redirected.</p> <p>The value can be 301, 302, 303, 307, or 308.</p> <p>Minimum: 1</p> <p>Maximum: 16</p>

Table 4-390 RedirectPoolsExtendConfig

Parameter	Type	Description
rewrite_url_enable	Boolean	Specifies whether to enable URL redirection.
rewrite_url_config	RewriteUrlConfig object	Specifies the URL for the backend server group that requests are forwarded to. This parameter is valid when rewrite_url_enable is set to true .

Table 4-391 RewriteUrlConfig

Parameter	Type	Description
host	String	Specifies the domain name that requests are redirected to. The domain name can contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit. The default value is `\${host} , indicating that the host of the request will be used.
path	String	Specifies the URL path.
query	String	Specifies the URL query character string.

Table 4-392 FixtedResponseConfig

Parameter	Type	Description
status_code	String	Specifies the HTTP status code configured in the forwarding policy. The value can be any integer in the range of 200–299, 400–499, or 500–599. Minimum: 1 Maximum: 16
content_type	String	Specifies the format of the response body. The value can be text/plain , text/css , text/html , application/javascript , or application/json . Minimum: 0 Maximum: 32
message_body	String	Specifies the content of the response message body. Minimum: 0 Maximum: 1024

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

Normal response to POST requests.

```
{
  "request_id": "b60d1d9a-5263-45b0-b1d6-2810ac7c52a1",
  "l7policy": {
    "redirect_pool_id": "768e9e8c-e7cb-4fef-b24b-af9399dbb240",
    "description": "",
    "admin_state_up": true,
    "rules": [ {
      "id": "c5c2d625-676b-431e-a4c7-c59cc2664881"
    } ],
    "project_id": "7a9941d34fc1497d8d0797429ecfd354",
    "listener_id": "cdb03a19-16b7-4e6b-bfec-047aeec74f56",
    "redirect_url": null,
    "redirect_url_config": null,
    "redirect_pools_config": {
      "pool_id": "722e9e8c-e7cb-4fef-b24b-af9399dbb240",
      "weight": 12
    },
    "redirect_pools_sticky_session_config": {
      "timeout": 23,
      "enable": false
    },
    "fixed_response_config": null,
    "redirect_listener_id": null,
    "action": "REDIRECT_TO_POOL",
    "position": 100,
    "priority": null,
    "provisioning_status": "ACTIVE",
    "id": "01832d99-bbd8-4340-9d0c-6ff8f7a37307",
    "name": "l7policy-67"
  }
}
```

Status Codes

Status Code	Description
201	Normal response to POST requests.

Error Codes

See [Error Codes](#).

4.14.2 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 4-393 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-394 Query Parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the last record on the previous page. Note: <ul style="list-style-type: none">• This parameter must be used together with limit.• If this parameter is not specified, the first page will be queried.• This parameter cannot be left blank or set to an invalid ID.
limit	No	Integer	Specifies the number of records on each page. Minimum: 0 Maximum: 2000 Default: 2000

Parameter	Mandatory	Type	Description
page_reverse	No	Boolean	<p>Specifies whether to use reverse query. Values:</p> <ul style="list-style-type: none"> • true: Query the previous page. • false (default): Query the next page. <p>Note:</p> <ul style="list-style-type: none"> • This parameter must be used together with limit. • If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker.
enterprise_project_id	No	Array	<p>Specifies the enterprise project ID.</p> <ul style="list-style-type: none"> • If this parameter is not passed, resources in the default enterprise project are queried, and authentication is performed based on the default enterprise project. • If this parameter is passed, its value can be the ID of an existing enterprise project (resources in the specific enterprise project are required) or all_granted_eps (resources in all enterprise projects are queried). <p>Multiple IDs can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p>
id	No	Array	<p>Specifies the forwarding policy ID.</p> <p>Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i>.</p>
name	No	Array	<p>Specifies the forwarding policy name.</p> <p>Multiple names can be queried in the format of <i>name=xxx&name=xxx</i>.</p>

Parameter	Mandatory	Type	Description
description	No	Array	Provides supplementary information about the forwarding policy. Multiple descriptions can be queried in the format of <i>description=xxx&description=xx</i> .
admin_state_up	No	Boolean	Specifies the administrative status of the forwarding policy. The default value is true . This parameter is unsupported. Please do not use it.
listener_id	No	Array	Specifies the ID of the listener to which the forwarding policy is added. Multiple IDs can be queried in the format of <i>listener_id=xxx&listener_id=xxx</i> .
position	No	Array	Specifies the forwarding policy priority. Multiple priorities can be queried in the format of <i>position=xxx&position=xxx</i> . This parameter is unsupported. Please do not use it.

Parameter	Mandatory	Type	Description
action	No	Array	<p>Specifies where requests are forwarded. The value can be one of the following:</p> <ul style="list-style-type: none"> • REDIRECT_TO_POOL: Requests are forwarded to another backend server group. • REDIRECT_TO_LISTENER: Requests are redirected to an HTTPS listener. • REDIRECT_TO_URL: Requests are redirected to another URL. • FIXED_RESPONSE: A fixed response body is returned. <p>Multiple values can be queried in the format of <i>action=xxx&action=xxx</i>.</p>
redirect_url	No	Array	<p>Specifies the URL to which requests will be forwarded. The URL must be in the format of <i>protocol://host:port/path?query</i>.</p> <p>Multiple URLs can be queried in the format of <i>redirect_url=xxx&redirect_url=xxx</i>.</p> <p>This parameter is unsupported. Please do not use it.</p>
redirect_pool_id	No	Array	<p>Specifies the ID of the backend server group to which requests will be forwarded.</p> <p>Multiple IDs can be queried in the format of <i>redirect_pool_id=xxx&redirect_pool_id=xxx</i>.</p>
redirect_listener_id	No	Array	<p>Specifies the ID of the listener to which requests are redirected.</p> <p>Multiple IDs can be queried in the format of <i>redirect_listener_id=xxx&redirect_listener_id=xxx</i>.</p>

Parameter	Mandatory	Type	Description
provisioning_status	No	Array	<p>Specifies the provisioning status of the forwarding policy.</p> <ul style="list-style-type: none"> • ACTIVE: The forwarding policy is provisioned successfully. • ERROR: The forwarding policy has the same rule as another forwarding policy added to the same listener. <p>Multiple provisioning statuses can be queried in the format of <i>provisioning_status=xxx&provisioning_status=xxx</i>.</p>
display_all_rules	No	Boolean	<p>Specifies whether to display details about the forwarding rule in the forwarding policy.</p> <ul style="list-style-type: none"> • true: Details about the forwarding rule are displayed. • false: Only the rule ID is displayed.
priority	No	Array	<p>Specifies the forwarding policy priority. A smaller value indicates a higher priority.</p> <p>Multiple priorities can be queried in the format of <i>position=xxx&position=xxx</i>.</p>

Request Parameters

Table 4-395 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-396 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
page_info	PageInfo object	Shows pagination information.
l7policies	Array of L7Policy objects	Lists the forwarding policies.

Table 4-397 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

Table 4-398 L7Policy

Parameter	Type	Description
action	String	<p>Specifies where requests will be forwarded. The value can be one of the following:</p> <ul style="list-style-type: none">● REDIRECT_TO_POOL: Requests will be forwarded to another backend server group.● REDIRECT_TO_LISTENER: Requests will be redirected to an HTTPS listener. <p>REDIRECT_TO_LISTENER has the highest priority. If requests are to be redirected to an HTTPS listener, other forwarding policies of the listener will become invalid.</p> <p>Note:</p> <ul style="list-style-type: none">● If action is set to REDIRECT_TO_POOL, the listener's protocol must be HTTP, HTTPS, or TERMINATED_HTTPS.● If action is set to REDIRECT_TO_LISTENER, the listener's protocol must be HTTP.

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the forwarding policy. The default value is true . This parameter is unsupported. Please do not use it.
description	String	Provides supplementary information about the forwarding policy.
id	String	Specifies the forwarding policy ID.
listener_id	String	Specifies the ID of the listener to which the forwarding policy is added.
name	String	Specifies the forwarding policy name. Minimum: 1 Maximum: 255
position	Integer	Specifies the forwarding policy priority. This parameter cannot be updated. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 100

Parameter	Type	Description
priority	Integer	<p>Specifies the forwarding policy priority. A smaller value indicates a higher priority. The value must be unique for forwarding policies of the same listener. This parameter will take effect only when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned. This parameter is unsupported for shared load balancers.</p> <ul style="list-style-type: none">• If action is set to REDIRECT_TO_LISTENER, the value can only be 0, indicating REDIRECT_TO_LISTENER has the highest priority.• If enhance_l7policy_enable is not enabled, 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 (EQUAL_TO), prefix match (STARTS_WITH), and regular expression match (REGEX). If the matching types are the same, the longer the URL 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.• If enhance_l7policy_enable is set to true and this parameter is not passed, the priority will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. If the highest priority of existing forwarding policies is the maximum (10,000), the forwarding policy will fail to be created because the final priority for creating the forwarding policy is the sum of 1 and 10,000, which exceeds the maximum. In this case, specify a value or adjust the priorities of existing forwarding policies. If no forwarding policies exist, the highest priority of existing forwarding policies will be set to 1 by default.
project_id	String	Specifies the project ID of the forwarding policy.

Parameter	Type	Description
provisioning_status	String	<p>Specifies the provisioning status of the forwarding policy.</p> <p>The value can be ACTIVE or ERROR.</p> <ul style="list-style-type: none"> ACTIVE (default): The forwarding policy is provisioned successfully.
redirect_pool_id	String	<p>Specifies the ID of the backend server group that requests will be forwarded to.</p> <ul style="list-style-type: none"> This parameter is valid and mandatory only when action is set to REDIRECT_TO_POOL. Either redirect_pools_config or redirect_pool_id needs to be specified. If both redirect_pools_config and redirect_pool_id are specified, redirect_pools_config will take effect. If action is set to REDIRECT_TO_LISTENER, this parameter is unavailable.
redirect_listener_id	String	<p>Specifies the ID of the listener to which requests are redirected. This parameter is mandatory when action is set to REDIRECT_TO_LISTENER.</p> <p>Note:</p> <ul style="list-style-type: none"> The listener's protocol must be HTTPS or TERMINATED_HTTPS. A listener added to another load balancer is not allowed. This parameter cannot be passed in the API for adding or updating a forwarding policy if action is set to REDIRECT_TO_POOL.
redirect_url	String	<p>Specifies the URL to which requests are forwarded.</p> <p>Format: <i>protocol://host:port/path?query</i></p> <p>This parameter is unsupported. Please do not use it.</p>
rules	Array of RuleRef objects	Lists the forwarding rules in the forwarding policy.

Parameter	Type	Description
redirect_url_config	RedirectUrlConfig object	<p>Specifies the URL to which requests are forwarded.</p> <p>For dedicated load balancers, this parameter will take effect only when advanced forwarding is enabled (enhance_l7policy_enable is set to true). If it is passed when enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to REDIRECT_TO_URL. It cannot be specified if the value of action is not REDIRECT_TO_URL.</p> <p>Format: <i>protocol://host:port/path?query</i></p> <p>At least one of the four parameters (protocol, host, port, and path) must be passed, or their values cannot be set to \${xxx} at the same time. (\${xxx} indicates that the value in the request will be inherited. For example, \${host} indicates the host in the URL to be redirected.)</p> <p>The values of protocol and port cannot be the same as those of the associated listener, and either host or path must be passed or their values cannot be \${xxx} at the same time.</p>
redirect_pools_extend_config	RedirectPoolsExtendConfig object	<p>Specifies the backend server group that the requests are forwarded to. This parameter is valid only when action is set to REDIRECT_TO_POOL.</p>
fixed_response_config	FixedResponseConfig object	<p>Specifies the configuration of the page that will be returned. This parameter will take effect when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to FIXED_RESPONSE. It cannot be specified if the value of action is not FIXED_RESPONSE.</p>
created_at	String	<p>Specifies the time when the forwarding policy was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>
updated_at	String	<p>Specifies the time when the forwarding policy was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>

Table 4-399 RuleRef

Parameter	Type	Description
id	String	Specifies the forwarding rule ID.

Table 4-400 RedirectUrlConfig

Parameter	Type	Description
protocol	String	Specifies the protocol for redirection. The value can be HTTP , HTTPS , or `\${protocol}` . The default value is `\${protocol}` , indicating that the protocol of the request will be used. Minimum: 1 Maximum: 36
host	String	Specifies the host name that requests are redirected to. The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. The default value is `\${host}` , indicating that the host of the request will be used. Default: `\${host}` Minimum: 1 Maximum: 128
port	String	Specifies the port that requests are redirected to. The default value is `\${port}` , indicating that the port of the request will be used. Default: `\${port}` Minimum: 1 Maximum: 16
path	String	Specifies the path that requests are redirected to. The default value is `\${path}` , indicating that the path of the request will be used. The value can contain only letters, digits, and special characters <code>_!;@^-%#&\$.*+?,=!: /()[]{} </code> and must start with a slash (/). Default: `\${path}` Minimum: 1 Maximum: 128

Parameter	Type	Description
query	String	<p>Specifies the query string set in the URL for redirection. The default value is {query}, indicating that the query string of the request will be used.</p> <p>For example, in the URL https://www.example.com:8080/elb?type=loadbalancer, {query} indicates type=loadbalancer. If this parameter is set to {query}&name=my_name, the URL will be redirected to https://www.example.com:8080/elb?type=loadbalancer&name=my_name.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters ! \$&'()*+,-./:;=?@^_`</p> <p>Default: {query}</p> <p>Minimum: 0</p> <p>Maximum: 128</p>
status_code	String	<p>Specifies the status code returned after the requests are redirected.</p> <p>The value can be 301, 302, 303, 307, or 308.</p> <p>Minimum: 1</p> <p>Maximum: 16</p>

Table 4-401 RedirectPoolsExtendConfig

Parameter	Type	Description
rewrite_url_enable	Boolean	Specifies whether to enable URL redirection.
rewrite_url_config	RewriteUrlConfig object	Specifies the URL for the backend server group that requests are forwarded to. This parameter is valid when rewrite_url_enable is set to true .

Table 4-402 RewriteUrlConfig

Parameter	Type	Description
host	String	Specifies the domain name that requests are redirected to. The domain name can contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit. The default value is `\${host} , indicating that the host of the request will be used.
path	String	Specifies the URL path.
query	String	Specifies the URL query character string.

Table 4-403 FixtedResponseConfig

Parameter	Type	Description
status_code	String	Specifies the HTTP status code configured in the forwarding policy. The value can be any integer in the range of 200–299, 400–499, or 500–599. Minimum: 1 Maximum: 16
content_type	String	Specifies the format of the response body. The value can be text/plain , text/css , text/html , application/javascript , or application/json . Minimum: 0 Maximum: 32
message_body	String	Specifies the content of the response message body. Minimum: 0 Maximum: 1024

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" : "d3c67339-be91-4813-bb24-85728a5d326a",
```

```
"l7policies" : [ {
  "redirect_pool_id" : "768e9e8c-e7cb-4fef-b24b-af9399dbb240",
  "description" : "",
  "admin_state_up" : true,
  "rules" : [ {
    "id" : "c5c2d625-676b-431e-a4c7-c59cc2664881"
  } ],
  "project_id" : "7a9941d34fc1497d8d0797429ecfd354",
  "listener_id" : "cdb03a19-16b7-4e6b-bfec-047aeec74f56",
  "redirect_url" : null,
  "redirect_url_config" : null,
  "redirect_pools_config" : {
    "pool_id" : "722e9e8c-e7cb-4fef-b24b-af9399dbb240",
    "weight" : 12
  },
  "redirect_pools_sticky_session_config" : {
    "timeout" : 23,
    "enable" : false
  },
  "fixed_response_config" : null,
  "redirect_listener_id" : null,
  "action" : "REDIRECT_TO_POOL",
  "position" : 100,
  "priority" : null,
  "provisioning_status" : "ACTIVE",
  "id" : "01832d99-bbd8-4340-9d0c-6ff8f7a37307",
  "name" : "l7policy-67"
}, {
  "redirect_pool_id" : null,
  "description" : "",
  "admin_state_up" : true,
  "rules" : [ {
    "id" : "390f3a9f-670d-4ca6-b72c-6be8a48a8a00"
  } ],
  "project_id" : "7a9941d34fc1497d8d0797429ecfd354",
  "listener_id" : "bd782cbf-fb5e-411a-9295-530bdec05058",
  "redirect_url" : null,
  "redirect_url_config" : null,
  "redirect_pools_config" : {
    "pool_id" : "722e9e8c-e7cb-4fef-b24b-af9399dbb240",
    "weight" : 12
  },
  "redirect_pools_sticky_session_config" : {
    "timeout" : 23,
    "enable" : false
  },
  "fixed_response_config" : {
    "content_type" : "text/plain",
    "message_body" : "",
    "status_code" : "207"
  },
  "redirect_listener_id" : null,
  "action" : "FIXED_RESPONSE",
  "position" : 6,
  "priority" : 2,
  "provisioning_status" : "ACTIVE",
  "id" : "049a8635-9754-444e-94aa-678993b39cd6",
  "name" : "l7policy-67"
} ],
"page_info" : {
  "next_marker" : "2587d8b1-9e8d-459c-9081-7bccaa075d2b",
  "previous_marker" : "01832d99-bbd8-4340-9d0c-6ff8f7a37307",
  "current_count" : 2
}
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.14.3 Viewing Details of a Forwarding Policy

Function

This API is used to view details of a forwarding policy.

Calling Method

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

URI

GET /v3/{project_id}/elb/l7policies/{l7policy_id}

Table 4-404 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
l7policy_id	Yes	String	Specifies the forwarding policy ID.

Request Parameters

Table 4-405 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-406 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
l7policy	L7Policy object	Specifies the forwarding policy.

Table 4-407 L7Policy

Parameter	Type	Description
action	String	Specifies where requests will be forwarded. The value can be one of the following: <ul style="list-style-type: none">• REDIRECT_TO_POOL: Requests will be forwarded to another backend server group.• REDIRECT_TO_LISTENER: Requests will be redirected to an HTTPS listener. REDIRECT_TO_LISTENER has the highest priority. If requests are to be redirected to an HTTPS listener, other forwarding policies of the listener will become invalid. Note: <ul style="list-style-type: none">• If action is set to REDIRECT_TO_POOL, the listener's protocol must be HTTP, HTTPS, or TERMINATED_HTTPS.• If action is set to REDIRECT_TO_LISTENER, the listener's protocol must be HTTP.
admin_state_up	Boolean	Specifies the administrative status of the forwarding policy. The default value is true . This parameter is unsupported. Please do not use it.
description	String	Provides supplementary information about the forwarding policy.
id	String	Specifies the forwarding policy ID.
listener_id	String	Specifies the ID of the listener to which the forwarding policy is added.
name	String	Specifies the forwarding policy name. Minimum: 1 Maximum: 255

Parameter	Type	Description
position	Integer	Specifies the forwarding policy priority. This parameter cannot be updated. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 100

Parameter	Type	Description
priority	Integer	<p>Specifies the forwarding policy priority. A smaller value indicates a higher priority. The value must be unique for forwarding policies of the same listener. This parameter will take effect only when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned. This parameter is unsupported for shared load balancers.</p> <ul style="list-style-type: none">• If action is set to REDIRECT_TO_LISTENER, the value can only be 0, indicating REDIRECT_TO_LISTENER has the highest priority.• If enhance_l7policy_enable is not enabled, 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 (EQUAL_TO), prefix match (STARTS_WITH), and regular expression match (REGEX). If the matching types are the same, the longer the URL 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.• If enhance_l7policy_enable is set to true and this parameter is not passed, the priority will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. If the highest priority of existing forwarding policies is the maximum (10,000), the forwarding policy will fail to be created because the final priority for creating the forwarding policy is the sum of 1 and 10,000, which exceeds the maximum. In this case, specify a value or adjust the priorities of existing forwarding policies. If no forwarding policies exist, the highest priority of existing forwarding policies will be set to 1 by default.
project_id	String	Specifies the project ID of the forwarding policy.

Parameter	Type	Description
provisioning_status	String	<p>Specifies the provisioning status of the forwarding policy.</p> <p>The value can be ACTIVE or ERROR.</p> <ul style="list-style-type: none"> • ACTIVE (default): The forwarding policy is provisioned successfully.
redirect_pool_id	String	<p>Specifies the ID of the backend server group that requests will be forwarded to.</p> <ul style="list-style-type: none"> • This parameter is valid and mandatory only when action is set to REDIRECT_TO_POOL. • Either redirect_pools_config or redirect_pool_id needs to be specified. If both redirect_pools_config and redirect_pool_id are specified, redirect_pools_config will take effect. • If action is set to REDIRECT_TO_LISTENER, this parameter is unavailable.
redirect_listener_id	String	<p>Specifies the ID of the listener to which requests are redirected. This parameter is mandatory when action is set to REDIRECT_TO_LISTENER.</p> <p>Note:</p> <ul style="list-style-type: none"> • The listener's protocol must be HTTPS or TERMINATED_HTTPS. • A listener added to another load balancer is not allowed. • This parameter cannot be passed in the API for adding or updating a forwarding policy if action is set to REDIRECT_TO_POOL.
redirect_url	String	<p>Specifies the URL to which requests are forwarded.</p> <p>Format: <i>protocol://host:port/path?query</i></p> <p>This parameter is unsupported. Please do not use it.</p>
rules	Array of RuleRef objects	Lists the forwarding rules in the forwarding policy.

Parameter	Type	Description
redirect_url_config	RedirectUrlConfig object	<p>Specifies the URL to which requests are forwarded.</p> <p>For dedicated load balancers, this parameter will take effect only when advanced forwarding is enabled (enhance_l7policy_enable is set to true). If it is passed when enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to REDIRECT_TO_URL. It cannot be specified if the value of action is not REDIRECT_TO_URL.</p> <p>Format: <i>protocol://host:port/path?query</i></p> <p>At least one of the four parameters (protocol, host, port, and path) must be passed, or their values cannot be set to \${xxx} at the same time. (\${xxx} indicates that the value in the request will be inherited. For example, \${host} indicates the host in the URL to be redirected.)</p> <p>The values of protocol and port cannot be the same as those of the associated listener, and either host or path must be passed or their values cannot be \${xxx} at the same time.</p>
redirect_pools_extend_config	RedirectPoolsExtendConfig object	<p>Specifies the backend server group that the requests are forwarded to. This parameter is valid only when action is set to REDIRECT_TO_POOL.</p>
fixed_response_config	FixedResponseConfig object	<p>Specifies the configuration of the page that will be returned. This parameter will take effect when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to FIXED_RESPONSE. It cannot be specified if the value of action is not FIXED_RESPONSE.</p>
created_at	String	<p>Specifies the time when the forwarding policy was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>
updated_at	String	<p>Specifies the time when the forwarding policy was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>

Table 4-408 RuleRef

Parameter	Type	Description
id	String	Specifies the forwarding rule ID.

Table 4-409 RedirectUrlConfig

Parameter	Type	Description
protocol	String	Specifies the protocol for redirection. The value can be HTTP , HTTPS , or \${protocol} . The default value is \${protocol} , indicating that the protocol of the request will be used. Minimum: 1 Maximum: 36
host	String	Specifies the host name that requests are redirected to. The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. The default value is \${host} , indicating that the host of the request will be used. Default: \${host} Minimum: 1 Maximum: 128
port	String	Specifies the port that requests are redirected to. The default value is \${port} , indicating that the port of the request will be used. Default: \${port} Minimum: 1 Maximum: 16
path	String	Specifies the path that requests are redirected to. The default value is \${path} , indicating that the path of the request will be used. The value can contain only letters, digits, and special characters <code>_!;@^-%#&\$.*+?,=!: /()[]{} </code> and must start with a slash (/). Default: \${path} Minimum: 1 Maximum: 128

Parameter	Type	Description
query	String	<p>Specifies the query string set in the URL for redirection. The default value is #{query}, indicating that the query string of the request will be used.</p> <p>For example, in the URL https://www.example.com:8080/elb?type=loadbalancer, #{query} indicates type=loadbalancer. If this parameter is set to #{query}&name=my_name, the URL will be redirected to https://www.example.com:8080/elb?type=loadbalancer&name=my_name.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters ! \$&'()*+,-./:;=?@^_`</p> <p>Default: #{query}</p> <p>Minimum: 0</p> <p>Maximum: 128</p>
status_code	String	<p>Specifies the status code returned after the requests are redirected.</p> <p>The value can be 301, 302, 303, 307, or 308.</p> <p>Minimum: 1</p> <p>Maximum: 16</p>

Table 4-410 RedirectPoolsExtendConfig

Parameter	Type	Description
rewrite_url_enable	Boolean	Specifies whether to enable URL redirection.
rewrite_url_config	RewriteUrlConfig object	Specifies the URL for the backend server group that requests are forwarded to. This parameter is valid when rewrite_url_enable is set to true .

Table 4-411 RewriteUrlConfig

Parameter	Type	Description
host	String	Specifies the domain name that requests are redirected to. The domain name can contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit. The default value is `\${host} , indicating that the host of the request will be used.
path	String	Specifies the URL path.
query	String	Specifies the URL query character string.

Table 4-412 FixtedResponseConfig

Parameter	Type	Description
status_code	String	Specifies the HTTP status code configured in the forwarding policy. The value can be any integer in the range of 200–299, 400–499, or 500–599. Minimum: 1 Maximum: 16
content_type	String	Specifies the format of the response body. The value can be text/plain , text/css , text/html , application/javascript , or application/json . Minimum: 0 Maximum: 32
message_body	String	Specifies the content of the response message body. Minimum: 0 Maximum: 1024

Example Requests

Querying 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" : {
    "redirect_pool_id" : "768e9e8c-e7cb-4fef-b24b-af9399dbb240",
    "description" : "",
    "admin_state_up" : true,
    "rules" : [ {
      "id" : "c5c2d625-676b-431e-a4c7-c59cc2664881"
    } ],
    "project_id" : "7a9941d34fc1497d8d0797429ecfd354",
    "listener_id" : "cdb03a19-16b7-4e6b-bfec-047aeec74f56",
    "redirect_url" : null,
    "redirect_url_config" : null,
    "redirect_pools_config" : {
      "pool_id" : "722e9e8c-e7cb-4fef-b24b-af9399dbb240",
      "weight" : 12
    },
    "redirect_pools_sticky_session_config" : {
      "timeout" : 23,
      "enable" : false
    },
    "fixed_response_config" : {
      "content_type" : "text/plain",
      "message_body" : "",
      "status_code" : "207"
    },
    "redirect_listener_id" : null,
    "action" : "REDIRECT_TO_POOL",
    "position" : 100,
    "priority" : 1,
    "provisioning_status" : "ACTIVE",
    "id" : "01832d99-bbd8-4340-9d0c-6ff8f7a37307",
    "name" : "l7policy-67"
  },
  "request_id" : "6be83ec4-623e-4840-a417-2fcdf8ad5dfa"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.14.4 Updating 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 4-413 Path Parameters

Parameter	Mandatory	Type	Description
l7policy_id	Yes	String	Specifies the forwarding policy ID.
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-414 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-415 Request body parameters

Parameter	Mandatory	Type	Description
l7policy	Yes	UpdateL7PolicyOption object	Specifies the forwarding policy.

Table 4-416 UpdateL7PolicyOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the forwarding policy. The default value is true . This parameter is unsupported. Please do not use it.
description	No	String	Provides supplementary information about the forwarding policy. Minimum: 0 Maximum: 255

Parameter	Mandatory	Type	Description
name	No	String	Specifies the forwarding policy name. Minimum: 0 Maximum: 255
redirect_listener_id	No	String	Specifies the ID of the listener to which requests are redirected. Note: <ul style="list-style-type: none">• This parameter cannot be left blank or set to null when action is set to REDIRECT_TO_LISTENER.• The listener's protocol must be HTTPS.• A listener added to another load balancer is not allowed.• This parameter cannot be passed in the API for adding or updating a forwarding policy if action is set to REDIRECT_TO_POOL.
redirect_pool_id	No	String	Specifies the ID of the backend server group that requests will be forwarded to. <ul style="list-style-type: none">• This parameter is valid and mandatory only when action is set to REDIRECT_TO_POOL. 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.• This parameter cannot be specified when action is set to REDIRECT_TO_LISTENER.

Parameter	Mandatory	Type	Description
redirect_pools_config	No	Array of UpdateRedirectPoolsConfig objects	<p>Specifies the configuration of the backend server group that the requests are forwarded to. This parameter is valid only when action is set to REDIRECT_TO_POOL.</p> <p>Note:</p> <ul style="list-style-type: none"> If action is set to REDIRECT_TO_POOL, specify either redirect_pool_id or redirect_pools_config. If both are specified, only redirect_pools_config takes effect. This parameter cannot be specified when action is set to REDIRECT_TO_LISTENER. All configuration will be overwritten.
redirect_pools_sticky_session_config	No	UpdateRedirectPoolsStickySessionConfig object	<p>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 groups.</p>

Parameter	Mandatory	Type	Description
redirect_url_config	No	UpdateRedirectUrlConfig object	<p>Specifies the URL to which requests are forwarded.</p> <p>For dedicated load balancers, this parameter will take effect only when advanced forwarding is enabled (enhance_l7policy_enable is set to true). If it is passed when enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to REDIRECT_TO_URL. It cannot be specified if the value of action is not REDIRECT_TO_URL.</p> <p>Format: <i>protocol://host:port/path?query</i></p> <p>At least one of the four parameters (protocol, host, port, and path) must be passed, or their values cannot be set to \${xxx} at the same time. (\${xxx} indicates that the value in the request will be inherited. For example, \${host} indicates the host in the URL to be redirected.)</p> <p>The values of protocol and port cannot be the same as those of the associated listener, and either host or path must be passed or their values cannot be \${xxx} at the same time.</p>

Parameter	Mandatory	Type	Description
fixed_response_config	No	UpdateFixedResponseConfig object	Specifies the configuration of the page that will be returned. This parameter will take effect when enhance_l7policy_enable is set to true . If this parameter is passed and enhance_l7policy_enable is set to false , an error will be returned. This parameter is mandatory when action is set to FIXED_RESPONSE . It cannot be specified if the value of action is not FIXED_RESPONSE .
redirect_pools_extend_config	No	UpdateRedirectPoolsExtendConfig object	Specifies the backend server group that the requests are forwarded to.
rules	No	Array of CreateRuleOption objects	Lists the forwarding rules in the forwarding policy. The list can contain a maximum of 10 forwarding rules (if conditions is specified, a condition is considered as a rule). If type is set to HOST_NAME , PATH , METHOD , or SOURCE_IP , only one forwarding rule can be created for each type. For details, see the description of l7rule .

Parameter	Mandatory	Type	Description
priority	No	Integer	<p>Specifies the forwarding policy priority. A smaller value indicates a higher priority. The value must be unique for forwarding policies of the same listener. This parameter will take effect only when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned. This parameter is unsupported for shared load balancers.</p> <ul style="list-style-type: none"> • If action is set to REDIRECT_TO_LISTENER, the value can only be 0, indicating REDIRECT_TO_LISTENER has the highest priority. • If enhance_l7policy_enable is not enabled, 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 (EQUAL_TO), prefix match (STARTS_WITH), and regular expression match (REGEX). If the matching types are the same, the longer the URL 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. • If enhance_l7policy_enable is set to true and this parameter is not passed,

Parameter	Mandatory	Type	Description
			<p>the priority will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. If the highest priority of existing forwarding policies is the maximum (10,000), the forwarding policy will fail to be created because the final priority for creating the forwarding policy is the sum of 1 and 10,000, which exceeds the maximum. In this case, specify a value or adjust the priorities of existing forwarding policies. If no forwarding policies exist, the highest priority of existing forwarding policies will be set to 1 by default.</p> <p>Minimum: 0 Maximum: 10000</p>

Table 4-417 UpdateRedirectPoolsConfig

Parameter	Mandatory	Type	Description
pool_id	Yes	String	Specifies the ID of the backend server group.
weight	No	String	<p>Specifies the weight of the backend server group. The value ranges from 1 (default) to 100. Requests are routed to backend server groups based on their weights. Backend server groups with higher weights receive proportionately more requests. No requests will be routed to a backend server group with a weight of 0.</p> <p>Default: 1</p>

Table 4-418 UpdateRedirectPoolsStickySessionConfig

Parameter	Mandatory	Type	Description
enable	No	Boolean	Specifies whether to enable sticky session for backend server groups configured in a forwarding policy. The default value is false , indicating that sticky session is disabled.
timeout	No	Integer	Specifies the duration that a session persists. The value ranges from 1 to 1440 (default), in minutes.

Table 4-419 UpdateRedirectUrlConfig

Parameter	Mandatory	Type	Description
protocol	No	String	Specifies the protocol for redirection. The value can be HTTP , HTTPS , or `\${protocol}` . The default value is `\${protocol}` , indicating that the protocol of the request will be used. Minimum: 1 Maximum: 36
host	No	String	Specifies the host name that requests are redirected to. The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. The default value is `\${host}` , indicating that the host of the request will be used. Default: `\${host}` Minimum: 1 Maximum: 128

Parameter	Mandatory	Type	Description
port	No	String	<p>Specifies the port that requests are redirected to. The default value is port, indicating that the port of the request will be used.</p> <p>Default: port Minimum: 1 Maximum: 16</p>
path	No	String	<p>Specifies the path that requests are redirected to. The default value is path, indicating that the path of the request will be used.</p> <p>The value can contain only letters, digits, and special characters <code>_-'@^-%#&\$.*+?,= /()[]{}</code> and must start with a slash (/).</p> <p>Default: path Minimum: 1 Maximum: 128</p>

Parameter	Mandatory	Type	Description
query	No	String	<p>Specifies the query string set in the URL for redirection. The default value is #{query}, indicating that the query string of the request will be used.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters <code>!\$&'()*+,-./:;=?@^_`</code></p> <p>For example, in the URL https://www.example.com:8080/elb?type=loadbalancer, #{query} indicates type=loadbalancer. If this parameter is set to #{query}&name=my_name, the URL will be redirected to https://www.example.com:8080/elb?type=loadbalancer&name=my_name.</p> <p>Default: #{query} Minimum: 0 Maximum: 128</p>
status_code	No	String	<p>Specifies the status code returned after the requests are redirected.</p> <p>The value can be 301, 302, 303, 307, or 308.</p> <p>Minimum: 1 Maximum: 16</p>
insert_headers_config	No	UpdateInsertHeadersConfig object	Specifies the headers you want to write into the request that matches the condition.
remove_headers_config	No	UpdateRemoveHeadersConfig object	Specifies the headers you want to remove from the request that matches the condition.

Table 4-420 UpdateFixedResponseConfig

Parameter	Mandatory	Type	Description
status_code	No	String	Specifies the HTTP status code configured in the forwarding rule. The value can be any integer in the range of 200–299, 400–499, or 500–599. Minimum: 1 Maximum: 16
content_type	No	String	Specifies the format of the response body. The value can be text/plain , text/css , text/html , application/javascript , or application/json . Minimum: 1 Maximum: 64
message_body	No	String	Specifies the content of the response message body. Minimum: 0 Maximum: 1024
insert_headers_config	No	UpdateInsertHeadersConfig object	Specifies the headers you want to write into the request that matches the condition.
remove_headers_config	No	UpdateRemoveHeadersConfig object	Specifies the headers you want to remove from the request that matches the condition.
traffic_limit_config	No	UpdateTrafficLimitConfig object	Specifies how requests are limited.

Table 4-421 UpdateRedirectPoolsExtendConfig

Parameter	Mandatory	Type	Description
rewrite_url_enable	No	Boolean	Specifies whether to enable URL redirection.
rewrite_url_config	No	UpdateRewriteUrlConfig object	Specifies the URL that requests are directed to. This parameter takes effect only when action is set to REDIRECT_TO_POOL .

Parameter	Mandatory	Type	Description
insert_headers_config	No	UpdateInsertHeadersConfig object	Specifies the headers you want to write into the request that matches the condition.
remove_headers_config	No	UpdateRemoveHeadersConfig object	Specifies the headers you want to remove from the request that matches the condition.
traffic_limit_config	No	UpdateTrafficLimitConfig object	Specifies how requests are limited.

Table 4-422 UpdateRewriteUrlConfig

Parameter	Mandatory	Type	Description
host	No	String	Specifies the domain name that requests are redirected to. The domain name can contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit. The default value is <code>\${host}</code> , indicating that the host of the request will be used.

Parameter	Mandatory	Type	Description
path	No	String	<p>Specifies the path that requests are redirected to. The value must start with a slash (/) and can contain only letters, digits, and special characters: <code>_~';@^-%#&\$.+?,=!: /()</code> \$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, `\${path} is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, `\${abc}#123, and the matching result is #123. If the dollar sign (\$) is followed by a special character, for example, `\${#}, the matching result is #.</p> <p>The default value is `\${path}, indicating that the path of the request will be used.</p>

Parameter	Mandatory	Type	Description
query	No	String	Specifies the query string set in the URL for redirection. The value can contain only letters, digits, and special characters: ! \$&'()+,.-/;:=?@^_` The letters in the name are case-sensitive. \$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, \${path} is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, \$abc#123 , and the matching result is #123 . If the dollar sign (\$) is followed by a special character, for example, \$# , the matching result is # . The default value is \${query} , indicating that the query string of the request will be used.

Table 4-423 UpdateInsertHeadersConfig

Parameter	Mandatory	Type	Description
configs	Yes	Array of UpdateInsertHeaderConfig objects	Specifies the headers you want to write into the request that matches the condition.

Table 4-424 UpdateInsertHeaderConfig

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the key of the header you want to write into the request that matches the condition. The value is a string of 1 to 40 case-insensitive characters. Only letters, digits, hyphens (-), and underscores (_) are allowed. The key cannot be the following: 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.
value_type	Yes	String	Specifies the value type. The value can be USER_DEFINED , REFERENCE_HEADER , or SYSTEM_DEFINED .
value	Yes	String	Specifies the value of the header. If value_type is set to SYSTEM_DEFINED , the value can be CLIENT-PORT , CLIENT-IP , ELB-PROTOCOL , ELB-ID , ELB-PORT , ELB-EIP , or ELB-VIP . 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.

Table 4-425 UpdateRemoveHeadersConfig

Parameter	Mandatory	Type	Description
configs	Yes	Array of UpdateRemoveHeaderConfig objects	Specifies the headers you want to remove from the request that matches the condition.

Table 4-426 UpdateRemoveHeaderConfig

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the header you want to remove from the request that matches the condition. The value is a string of 1 to 40 case-insensitive characters. Only letters, digits, hyphens (-), and underscores (_) are allowed. The key cannot be the following: 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.

Table 4-427 UpdateTrafficLimitConfig

Parameter	Mandatory	Type	Description
qps	No	Integer	Specifies the maximum number of queries per second (QPS). The value ranges from 0 to 1,00,000 . 0 indicates that QPS is not limited. Minimum: 0 Maximum: 100000

Parameter	Mandatory	Type	Description
per_source_ip_qps	No	Integer	Specifies the maximum number of queries per second (QPS) from a source IP address. This parameter is not available for QUIC listeners. The value can be 0 or null . The value ranges from 0 to 1,00,000 . 0 indicates that QPS is not limited. If qps is not set to 0 , per_source_ip_qps must be specified a smaller value than qps . Minimum: 0 Maximum: 100000
burst	No	Integer	Specifies the maximum number of queries per second (QPS) from a source IP address. The value ranges from 0 to 1,00,000 . If the number of requests exceeds the value specified for qps but not reaches the value specified for burst , 503 status code will not be returned. Minimum: 0 Maximum: 100000

Table 4-428 CreateRuleOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the forwarding rule. The default value is true . This parameter is unsupported. Please do not use it.

Parameter	Mandatory	Type	Description
compare_type	Yes	String	<p>Specifies how requests are matched with the forwarding rule. Values:</p> <ul style="list-style-type: none"> • EQUAL_TO: exact match. • REGEX: regular expression match • STARTS_WITH: prefix match <p>Note:</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, the value can only be EQUAL_TO, and asterisks (*) can be used as wildcard characters. • If type is set to PATH, the value can be REGEX, STARTS_WITH, or EQUAL_TO. • If type is set to METHOD or SOURCE_IP, the value can only be EQUAL_TO. • If type is set to HEADER or QUERY_STRING, the value can only be EQUAL_TO, asterisks (*) and question marks (?) can be used as wildcard characters.
key	No	String	<p>Specifies the key of match content. For example, if the request header is used for forwarding, key is the request header.</p> <p>This parameter is unsupported. Please do not use it.</p> <p>Minimum: 0 Maximum: 255</p>

Parameter	Mandatory	Type	Description
value	Yes	String	<p>Specifies the value of the match content. For example, if a domain name is used for matching, value is the domain name.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, the value can contain letters, digits, hyphens (-), periods (.), and asterisks (*) <i>and must start with a letter or digit.</i> If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. • If type is set to PATH and compare_type to STARTS_WITH or EQUAL_TO, the value can contain only letters, digits, and special characters <code>_~!;@^-%#&\$.*+?,=!: /()[]{}</code> • If type is set to METHOD, SOURCE_IP, HEADER, or QUERY_STRING, this parameter will not take effect, and conditions will be used to specify the key and value. <p>Minimum: 1 Maximum: 128</p>
project_id	No	String	<p>Specifies the project ID.</p> <p>Minimum: 1 Maximum: 32</p>

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Specifies the match content. The value can be one of the following:</p> <ul style="list-style-type: none">• HOST_NAME: A domain name will be used for matching.• PATH: A URL will be used for matching.• METHOD: An HTTP request method will be used for matching.• HEADER: The request header will be used for matching.• QUERY_STRING: A query string will be used for matching.• SOURCE_IP: The source IP address will be used for matching. Note: If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, only one forwarding rule can be created for each type.
invert	No	Boolean	<p>Specifies whether reverse matching is supported. The value can be true or false (default).</p> <p>This parameter is unsupported. Please do not use it.</p>
conditions	No	Array of CreateRuleCondition objects	<p>Specifies the matching conditions of the forwarding rule. This parameter is available only when enhance_l7policy_enable is set to true.</p> <p>If conditions is specified, parameters key and value will not take effect, and the conditions value will contain all conditions configured for the forwarding rule. The keys in the list must be the same, whereas each value must be unique.</p>

Table 4-429 CreateRuleCondition

Parameter	Mandatory	Type	Description
key	No	String	<p>Specifies the key of match item.</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is left blank. If type is set to HEADER, key indicates the name of the HTTP header parameter. The value can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_). If type is set to QUERY_STRING, key indicates the name of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({ }), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. <p>All keys in the conditions list in the same rule must be the same.</p> <p>Minimum: 1 Maximum: 128</p>

Parameter	Mandatory	Type	Description
value	Yes	String	<p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (), <i>and must start with a letter, digit, or asterisk (^)</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~!;@^-%#&\$.*+? ,=!: /() [] {}</code> If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP 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 1 character. If type is set to QUERY_STRING, key indicates the name of the

Parameter	Mandatory	Type	Description
			<p>query parameter, and value 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 (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character.</p> <ul style="list-style-type: none"> • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value 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.] <p>All values of the condition list in a forwarding rule must be unique.</p> <p>Minimum: 1 Maximum: 128</p>

Response Parameters

Status code: 200

Table 4-430 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
l7policy	L7Policy object	Specifies the forwarding policy.

Table 4-431 L7Policy

Parameter	Type	Description
action	String	Specifies where requests will be forwarded. The value can be one of the following: <ul style="list-style-type: none">• REDIRECT_TO_POOL: Requests will be forwarded to another backend server group.• REDIRECT_TO_LISTENER: Requests will be redirected to an HTTPS listener. REDIRECT_TO_LISTENER has the highest priority. If requests are to be redirected to an HTTPS listener, other forwarding policies of the listener will become invalid. Note: <ul style="list-style-type: none">• If action is set to REDIRECT_TO_POOL, the listener's protocol must be HTTP, HTTPS, or TERMINATED_HTTPS.• If action is set to REDIRECT_TO_LISTENER, the listener's protocol must be HTTP.
admin_state_up	Boolean	Specifies the administrative status of the forwarding policy. The default value is true . This parameter is unsupported. Please do not use it.
description	String	Provides supplementary information about the forwarding policy.
id	String	Specifies the forwarding policy ID.
listener_id	String	Specifies the ID of the listener to which the forwarding policy is added.
name	String	Specifies the forwarding policy name. Minimum: 1 Maximum: 255

Parameter	Type	Description
position	Integer	Specifies the forwarding policy priority. This parameter cannot be updated. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 100

Parameter	Type	Description
priority	Integer	<p>Specifies the forwarding policy priority. A smaller value indicates a higher priority. The value must be unique for forwarding policies of the same listener. This parameter will take effect only when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned. This parameter is unsupported for shared load balancers.</p> <ul style="list-style-type: none">• If action is set to REDIRECT_TO_LISTENER, the value can only be 0, indicating REDIRECT_TO_LISTENER has the highest priority.• If enhance_l7policy_enable is not enabled, 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 (EQUAL_TO), prefix match (STARTS_WITH), and regular expression match (REGEX). If the matching types are the same, the longer the URL 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.• If enhance_l7policy_enable is set to true and this parameter is not passed, the priority will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. If the highest priority of existing forwarding policies is the maximum (10,000), the forwarding policy will fail to be created because the final priority for creating the forwarding policy is the sum of 1 and 10,000, which exceeds the maximum. In this case, specify a value or adjust the priorities of existing forwarding policies. If no forwarding policies exist, the highest priority of existing forwarding policies will be set to 1 by default.
project_id	String	Specifies the project ID of the forwarding policy.

Parameter	Type	Description
provisioning_status	String	<p>Specifies the provisioning status of the forwarding policy.</p> <p>The value can be ACTIVE or ERROR.</p> <ul style="list-style-type: none"> ACTIVE (default): The forwarding policy is provisioned successfully.
redirect_pool_id	String	<p>Specifies the ID of the backend server group that requests will be forwarded to.</p> <ul style="list-style-type: none"> This parameter is valid and mandatory only when action is set to REDIRECT_TO_POOL. Either redirect_pools_config or redirect_pool_id needs to be specified. If both redirect_pools_config and redirect_pool_id are specified, redirect_pools_config will take effect. If action is set to REDIRECT_TO_LISTENER, this parameter is unavailable.
redirect_listener_id	String	<p>Specifies the ID of the listener to which requests are redirected. This parameter is mandatory when action is set to REDIRECT_TO_LISTENER.</p> <p>Note:</p> <ul style="list-style-type: none"> The listener's protocol must be HTTPS or TERMINATED_HTTPS. A listener added to another load balancer is not allowed. This parameter cannot be passed in the API for adding or updating a forwarding policy if action is set to REDIRECT_TO_POOL.
redirect_url	String	<p>Specifies the URL to which requests are forwarded.</p> <p>Format: <i>protocol://host:port/path?query</i></p> <p>This parameter is unsupported. Please do not use it.</p>
rules	Array of RuleRef objects	Lists the forwarding rules in the forwarding policy.

Parameter	Type	Description
redirect_url_config	RedirectUrlConfig object	<p>Specifies the URL to which requests are forwarded.</p> <p>For dedicated load balancers, this parameter will take effect only when advanced forwarding is enabled (enhance_l7policy_enable is set to true). If it is passed when enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to REDIRECT_TO_URL. It cannot be specified if the value of action is not REDIRECT_TO_URL.</p> <p>Format: <i>protocol://host:port/path?query</i></p> <p>At least one of the four parameters (protocol, host, port, and path) must be passed, or their values cannot be set to \${xxx} at the same time. (\${xxx} indicates that the value in the request will be inherited. For example, \${host} indicates the host in the URL to be redirected.)</p> <p>The values of protocol and port cannot be the same as those of the associated listener, and either host or path must be passed or their values cannot be \${xxx} at the same time.</p>
redirect_pools_extend_config	RedirectPoolsExtendConfig object	<p>Specifies the backend server group that the requests are forwarded to. This parameter is valid only when action is set to REDIRECT_TO_POOL.</p>
fixed_response_config	FixedResponseConfig object	<p>Specifies the configuration of the page that will be returned. This parameter will take effect when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to FIXED_RESPONSE. It cannot be specified if the value of action is not FIXED_RESPONSE.</p>
created_at	String	<p>Specifies the time when the forwarding policy was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>
updated_at	String	<p>Specifies the time when the forwarding policy was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p>

Table 4-432 RuleRef

Parameter	Type	Description
id	String	Specifies the forwarding rule ID.

Table 4-433 RedirectUrlConfig

Parameter	Type	Description
protocol	String	Specifies the protocol for redirection. The value can be HTTP , HTTPS , or \${protocol} . The default value is \${protocol} , indicating that the protocol of the request will be used. Minimum: 1 Maximum: 36
host	String	Specifies the host name that requests are redirected to. The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. The default value is \${host} , indicating that the host of the request will be used. Default: \${host} Minimum: 1 Maximum: 128
port	String	Specifies the port that requests are redirected to. The default value is \${port} , indicating that the port of the request will be used. Default: \${port} Minimum: 1 Maximum: 16
path	String	Specifies the path that requests are redirected to. The default value is \${path} , indicating that the path of the request will be used. The value can contain only letters, digits, and special characters <code>_!;@^-%#&\$.*+?,=:/()[]{} </code> and must start with a slash (/). Default: \${path} Minimum: 1 Maximum: 128

Parameter	Type	Description
query	String	<p>Specifies the query string set in the URL for redirection. The default value is {query}, indicating that the query string of the request will be used.</p> <p>For example, in the URL https://www.example.com:8080/elb?type=loadbalancer, {query} indicates type=loadbalancer. If this parameter is set to {query}&name=my_name, the URL will be redirected to https://www.example.com:8080/elb?type=loadbalancer&name=my_name.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters ! \$&'()*+,-./:;=?@^_`</p> <p>Default: {query}</p> <p>Minimum: 0</p> <p>Maximum: 128</p>
status_code	String	<p>Specifies the status code returned after the requests are redirected.</p> <p>The value can be 301, 302, 303, 307, or 308.</p> <p>Minimum: 1</p> <p>Maximum: 16</p>

Table 4-434 RedirectPoolsExtendConfig

Parameter	Type	Description
rewrite_url_enable	Boolean	Specifies whether to enable URL redirection.
rewrite_url_config	RewriteUrlConfig object	Specifies the URL for the backend server group that requests are forwarded to. This parameter is valid when rewrite_url_enable is set to true .

Table 4-435 RewriteUrlConfig

Parameter	Type	Description
host	String	Specifies the domain name that requests are redirected to. The domain name can contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit. The default value is `\${host} , indicating that the host of the request will be used.
path	String	Specifies the URL path.
query	String	Specifies the URL query character string.

Table 4-436 FixtedResponseConfig

Parameter	Type	Description
status_code	String	Specifies the HTTP status code configured in the forwarding policy. The value can be any integer in the range of 200–299, 400–499, or 500–599. Minimum: 1 Maximum: 16
content_type	String	Specifies the format of the response body. The value can be text/plain , text/css , text/html , application/javascript , or application/json . Minimum: 0 Maximum: 32
message_body	String	Specifies the content of the response message body. Minimum: 0 Maximum: 1024

Example Requests

Modifying a forwarding policy

```
PUT 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.

```
{
  "request_id": "e5c07525-1470-47b6-9b0c-567527a036aa",
  "l7policy": {
    "redirect_pool_id": "768e9e8c-e7cb-4fef-b24b-af9399dbb240",
    "description": "",
    "admin_state_up": true,
    "rules": [ {
      "id": "c5c2d625-676b-431e-a4c7-c59cc2664881"
    } ],
    "project_id": "7a9941d34fc1497d8d0797429ecfd354",
    "listener_id": "cdb03a19-16b7-4e6b-bfec-047aeec74f56",
    "redirect_url": null,
    "redirect_url_config": null,
    "redirect_pools_config": {
      "pool_id": "722e9e8c-e7cb-4fef-b24b-af9399dbb240",
      "weight": 12
    },
    "redirect_pools_sticky_session_config": {
      "timeout": 23,
      "enable": false
    },
    "fixed_response_config": null,
    "redirect_listener_id": null,
    "action": "REDIRECT_TO_POOL",
    "position": 100,
    "priority": null,
    "provisioning_status": "ACTIVE",
    "id": "01832d99-bbd8-4340-9d0c-6ff8f7a37307",
    "name": "l7policy-67"
  }
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.14.5 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 4-437 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
l7policy_id	Yes	String	Specifies the forwarding policy ID.

Request Parameters

Table 4-438 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

None

Example Requests

Delete a given forwarding policy

```
DELETE https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/l7policies/cf4360fd-8631-41ff-a6f5-b72c35da74be
```

Example Responses

None

Status Codes

Status Code	Description
204	Successful request.

Error Codes

See [Error Codes](#).

4.15 Forwarding Rule

4.15.1 Adding a Forwarding Rule

Function

This API is used to add a forwarding rule.

Constraints

If the action of **l7policy** is set to **Redirect to another listener**, **l7rule** cannot be created.

Calling Method

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

URI

POST /v3/{project_id}/elb/l7policies/{l7policy_id}/rules

Table 4-439 Path Parameters

Parameter	Mandatory	Type	Description
l7policy_id	Yes	String	Specifies the forwarding policy ID.
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-440 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-441 Request body parameters

Parameter	Mandatory	Type	Description
rule	Yes	CreateRuleOption object	Specifies the forwarding rule.

Table 4-442 CreateRuleOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the forwarding rule. The default value is true . This parameter is unsupported. Please do not use it.
compare_type	Yes	String	Specifies how requests are matched with the forwarding rule. Values: <ul style="list-style-type: none"> • EQUAL_TO: exact match. • REGEX: regular expression match • STARTS_WITH: prefix match Note: <ul style="list-style-type: none"> • If type is set to HOST_NAME, the value can only be EQUAL_TO, and asterisks (*) can be used as wildcard characters. • If type is set to PATH, the value can be REGEX, STARTS_WITH, or EQUAL_TO. • If type is set to METHOD or SOURCE_IP, the value can only be EQUAL_TO. • If type is set to HEADER or QUERY_STRING, the value can only be EQUAL_TO, asterisks (*) and question marks (?) can be used as wildcard characters.
key	No	String	Specifies the key of match content. For example, if the request header is used for forwarding, key is the request header. This parameter is unsupported. Please do not use it. Minimum: 0 Maximum: 255

Parameter	Mandatory	Type	Description
value	Yes	String	<p>Specifies the value of the match content. For example, if a domain name is used for matching, value is the domain name.</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, the value can contain letters, digits, hyphens (-), periods (.), and asterisks (*) <i>and must start with a letter or digit.</i> If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. If type is set to PATH and compare_type to STARTS_WITH or EQUAL_TO, the value can contain only letters, digits, and special characters <code>_~!;@^-%#&\$.*+?,=!: /()[]{}</code> If type is set to METHOD, SOURCE_IP, HEADER, or QUERY_STRING, this parameter will not take effect, and conditions will be used to specify the key and value. <p>Minimum: 1 Maximum: 128</p>
project_id	No	String	<p>Specifies the project ID.</p> <p>Minimum: 1 Maximum: 32</p>

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Specifies the match content. The value can be one of the following:</p> <ul style="list-style-type: none"> • HOST_NAME: A domain name will be used for matching. • PATH: A URL will be used for matching. • METHOD: An HTTP request method will be used for matching. • HEADER: The request header will be used for matching. • QUERY_STRING: A query string will be used for matching. • SOURCE_IP: The source IP address will be used for matching. Note: If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, only one forwarding rule can be created for each type.
invert	No	Boolean	<p>Specifies whether reverse matching is supported. The value can be true or false (default).</p> <p>This parameter is unsupported. Please do not use it.</p>
conditions	No	Array of CreateRuleCondition objects	<p>Specifies the matching conditions of the forwarding rule. This parameter is available only when enhance_l7policy_enable is set to true.</p> <p>If conditions is specified, parameters key and value will not take effect, and the conditions value will contain all conditions configured for the forwarding rule. The keys in the list must be the same, whereas each value must be unique.</p>

Table 4-443 CreateRuleCondition

Parameter	Mandatory	Type	Description
key	No	String	<p>Specifies the key of match item.</p> <ul style="list-style-type: none">• If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is left blank.• If type is set to HEADER, key indicates the name of the HTTP header parameter. The value can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_).• If type is set to QUERY_STRING, key indicates the name of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({ }), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. <p>All keys in the conditions list in the same rule must be the same.</p> <p>Minimum: 1 Maximum: 128</p>

Parameter	Mandatory	Type	Description
value	Yes	String	<p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (), <i>and must start with a letter, digit, or asterisk (^)</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~!;@^-%#&\$.*+? ,=!: /() [] {}</code> If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP 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 1 character. If type is set to QUERY_STRING, key indicates the name of the

Parameter	Mandatory	Type	Description
			<p>query parameter, and value 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 (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character.</p> <ul style="list-style-type: none"> • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value 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.] <p>All values of the condition list in a forwarding rule must be unique.</p> <p>Minimum: 1 Maximum: 128</p>

Response Parameters

Status code: 201

Table 4-444 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
rule	L7Rule object	Specifies the forwarding rule.

Table 4-445 L7Rule

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the forwarding rule. The default value is true . This parameter is unsupported. Please do not use it.
compare_type	String	Specifies how requests are matched with the domain name or URL. <ul style="list-style-type: none">• If type is set to HOST_NAME, this parameter can only be set to EQUAL_TO.• If type is set to PATH, the value can be REGEX, STARTS_WITH, or EQUAL_TO.
key	String	Specifies the key of the match content. Minimum: 1 Maximum: 255
project_id	String	Specifies the project ID.

Parameter	Type	Description
type	String	<p>Specifies the type of the forwarding rule. The value can be one of the following:</p> <ul style="list-style-type: none"> ● HOST_NAME: A domain name will be used for matching. ● PATH: A URL will be used for matching. ● METHOD: An HTTP request method will be used for matching. ● HEADER: The request header will be used for matching. ● QUERY_STRING: A query string will be used for matching. ● SOURCE_IP: The source IP address will be used for matching. <p>Note: If type is set to HOST_NAME, PATH, METHOD, and SOURCE_IP, only one forwarding rule can be created for each type. If type is set to HEADER and QUERY_STRING, multiple forwarding rules can be created for each type.</p>
value	String	<p>Specifies the value of the match item. For example, if a domain name is used for matching, value is the domain name. This parameter will take effect only when conditions is left blank.</p> <ul style="list-style-type: none"> ● If type is set to HOST_NAME, the value can contain letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. ● If type is set to PATH and compare_type to STARTS_WITH or EQUAL_TO, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~'!@^-%#&\$.*+?,=:\ /() [] {}</code> ● If type is set to METHOD, SOURCE_IP, HEADER, or QUERY_STRING, this parameter will not take effect, and conditions will be used to specify the key and value. <p>Minimum: 1 Maximum: 128</p>

Parameter	Type	Description
provisioning_status	String	Specifies the provisioning status of the forwarding rule. The value can only be ACTIVE (default), PENDING_CREATE , or ERROR . This parameter is unsupported. Please do not use it.
invert	Boolean	Specifies whether reverse matching is supported. The value is fixed at false . This parameter can be updated but will not take effect.
id	String	Specifies the forwarding policy ID.
conditions	Array of RuleCondition objects	Specifies the matching conditions of the forwarding rule. This parameter will take effect when enhance_l7policy_enable is set to .true . If conditions is specified, key and value will not take effect, and the value of this parameter will contain all conditions configured for the forwarding rule. The keys in the list must be the same, whereas each value must be unique.
created_at	String	Specifies the time when the forwarding rule was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
updated_at	String	Specifies the time when the forwarding rule was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).

Table 4-446 RuleCondition

Parameter	Type	Description
key	String	<p>Specifies the key of match item.</p> <ul style="list-style-type: none">• If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is left blank.• If type is set to HEADER, key indicates the name of the HTTP header parameter. The value can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_).• If type is set to QUERY_STRING, key indicates the name of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({ }), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. <p>All keys in the conditions list in the same rule must be the same.</p> <p>Minimum: 1</p> <p>Maximum: 128</p>

Parameter	Type	Description
value	String	<p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), <i>and must start with a letter, digit, or asterisk ()</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. • If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+?,=!: /() []{}</code> • If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP 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 1 character. • If type is set to QUERY_STRING, key indicates the name of the query parameter, and value 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 (< >), backslashes (\\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value indicates the source IP address of the request. The value is an IPv4

Parameter	Type	Description
		or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.] All values of the condition list in a forwarding rule must be unique. Minimum: 1 Maximum: 128

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

Normal response to POST requests.

```
{
  "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"
}
```

Status Codes

Status Code	Description
201	Normal response to POST requests.

Error Codes

See [Error Codes](#).

4.15.2 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 4-447 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
l7policy_id	Yes	String	Specifies the forwarding policy ID.

Table 4-448 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records on each page. Minimum: 0 Maximum: 2000 Default: 2000

Parameter	Mandatory	Type	Description
marker	No	String	<p>Specifies the ID of the last record on the previous page.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter must be used together with limit. • If this parameter is not specified, the first page will be queried. • This parameter cannot be left blank or set to an invalid ID.
page_reverse	No	Boolean	<p>Specifies whether to use reverse query. Values:</p> <ul style="list-style-type: none"> • true: Query the previous page. • false (default): Query the next page. <p>Note:</p> <ul style="list-style-type: none"> • This parameter must be used together with limit. • If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker.
id	No	Array	<p>Specifies the forwarding rule ID.</p> <p>Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i>.</p>
compare_type	No	Array	<p>Specifies how requests are matched with the domain names or URL. Values:</p> <ul style="list-style-type: none"> • EQUAL_TO: exact match. • REGEX: regular expression match • STARTS_WITH: prefix match <p>Multiple values can be queried in the format of <i>compare_type=xxx&compare_type=xxx</i>.</p>

Parameter	Mandatory	Type	Description
provisioning_status	No	Array	Specifies the provisioning status of the forwarding rule. The value can only be ACTIVE , indicating that the forwarding rule is provisioned successfully. Multiple provisioning statuses can be queried in the format of <i>provisioning_status=xxx&provisioning_status=xxx</i> .
invert	No	Boolean	Specifies whether reverse matching is supported. The value is fixed at false . This parameter can be updated but remains invalid.
admin_state_up	No	Boolean	Specifies the administrative status of the forwarding rule. The default value is true . This parameter is unsupported. Please do not use it.
value	No	Array	Specifies the value of the match content. Multiple values can be queried in the format of <i>value=xxx&value=xxx</i> .
key	No	Array	Specifies the key of the match content that is used to identify the forwarding rule. Multiple keys can be queried in the format of <i>key=xxx&key=xxx</i> . This parameter is unsupported. Please do not use it.
type	No	Array	Specifies the match type. The value can be HOST_NAME or PATH . The type of forwarding rules for the same forwarding policy cannot be the same. Multiple types can be queried in the format of <i>type=xxx&type=xxx</i> .

Parameter	Mandatory	Type	Description
enterprise_project_id	No	Array	<p>Specifies the enterprise project ID.</p> <ul style="list-style-type: none"> If this parameter is not passed, resources in the default enterprise project are queried, and authentication is performed based on the default enterprise project. If this parameter is passed, its value can be the ID of an existing enterprise project (resources in the specific enterprise project are required) or all_granted_eps (resources in all enterprise projects are queried). <p>Multiple IDs can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p>

Request Parameters

Table 4-449 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-450 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
page_info	PageInfo object	Shows pagination information.

Parameter	Type	Description
rules	Array of L7Rule objects	Lists the forwarding rules.

Table 4-451 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

Table 4-452 L7Rule

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the forwarding rule. The default value is true . This parameter is unsupported. Please do not use it.
compare_type	String	Specifies how requests are matched with the domain name or URL. <ul style="list-style-type: none"> If type is set to HOST_NAME, this parameter can only be set to EQUAL_TO. If type is set to PATH, the value can be REGEX, STARTS_WITH, or EQUAL_TO.
key	String	Specifies the key of the match content. Minimum: 1 Maximum: 255
project_id	String	Specifies the project ID.

Parameter	Type	Description
type	String	<p>Specifies the type of the forwarding rule. The value can be one of the following:</p> <ul style="list-style-type: none"> ● HOST_NAME: A domain name will be used for matching. ● PATH: A URL will be used for matching. ● METHOD: An HTTP request method will be used for matching. ● HEADER: The request header will be used for matching. ● QUERY_STRING: A query string will be used for matching. ● SOURCE_IP: The source IP address will be used for matching. <p>Note: If type is set to HOST_NAME, PATH, METHOD, and SOURCE_IP, only one forwarding rule can be created for each type. If type is set to HEADER and QUERY_STRING, multiple forwarding rules can be created for each type.</p>
value	String	<p>Specifies the value of the match item. For example, if a domain name is used for matching, value is the domain name. This parameter will take effect only when conditions is left blank.</p> <ul style="list-style-type: none"> ● If type is set to HOST_NAME, the value can contain letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. ● If type is set to PATH and compare_type to STARTS_WITH or EQUAL_TO, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~'!@^-%#&\$.*+?,=:\ /() [] {}</code> ● If type is set to METHOD, SOURCE_IP, HEADER, or QUERY_STRING, this parameter will not take effect, and conditions will be used to specify the key and value. <p>Minimum: 1 Maximum: 128</p>

Parameter	Type	Description
provisioning_status	String	Specifies the provisioning status of the forwarding rule. The value can only be ACTIVE (default), PENDING_CREATE , or ERROR . This parameter is unsupported. Please do not use it.
invert	Boolean	Specifies whether reverse matching is supported. The value is fixed at false . This parameter can be updated but will not take effect.
id	String	Specifies the forwarding policy ID.
conditions	Array of RuleCondition objects	Specifies the matching conditions of the forwarding rule. This parameter will take effect when enhance_l7policy_enable is set to .true . If conditions is specified, key and value will not take effect, and the value of this parameter will contain all conditions configured for the forwarding rule. The keys in the list must be the same, whereas each value must be unique.
created_at	String	Specifies the time when the forwarding rule was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
updated_at	String	Specifies the time when the forwarding rule was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).

Table 4-453 RuleCondition

Parameter	Type	Description
key	String	<p>Specifies the key of match item.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is left blank. • If type is set to HEADER, key indicates the name of the HTTP header parameter. The value can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_). • If type is set to QUERY_STRING, key indicates the name of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({ }), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. <p>All keys in the conditions list in the same rule must be the same.</p> <p>Minimum: 1</p> <p>Maximum: 128</p>

Parameter	Type	Description
value	String	<p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), <i>and must start with a letter, digit, or asterisk ()</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. • If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+?,=!: /() []{}</code> • If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP 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 1 character. • If type is set to QUERY_STRING, key indicates the name of the query parameter, and value 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 (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value indicates the source IP address of the request. The value is an IPv4

Parameter	Type	Description
		or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.] All values of the condition list in a forwarding rule must be unique. Minimum: 1 Maximum: 128

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"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.15.3 Viewing Details of a Forwarding Rule

Function

This API is used to view 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 4-454 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
l7policy_id	Yes	String	Specifies the forwarding policy.
l7rule_id	Yes	String	Specifies the forwarding rule.

Request Parameters

Table 4-455 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-456 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
rule	L7Rule object	Specifies the forwarding rule.

Table 4-457 L7Rule

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the forwarding rule. The default value is true . This parameter is unsupported. Please do not use it.
compare_type	String	Specifies how requests are matched with the domain name or URL. <ul style="list-style-type: none">• If type is set to HOST_NAME, this parameter can only be set to EQUAL_TO.• If type is set to PATH, the value can be REGEX, STARTS_WITH, or EQUAL_TO.
key	String	Specifies the key of the match content. Minimum: 1 Maximum: 255
project_id	String	Specifies the project ID.
type	String	Specifies the type of the forwarding rule. The value can be one of the following: <ul style="list-style-type: none">• HOST_NAME: A domain name will be used for matching.• PATH: A URL will be used for matching.• METHOD: An HTTP request method will be used for matching.• HEADER: The request header will be used for matching.• QUERY_STRING: A query string will be used for matching.• SOURCE_IP: The source IP address will be used for matching. Note: If type is set to HOST_NAME , PATH , METHOD , and SOURCE_IP , only one forwarding rule can be created for each type. If type is set to HEADER and QUERY_STRING , multiple forwarding rules can be created for each type.

Parameter	Type	Description
value	String	<p>Specifies the value of the match item. For example, if a domain name is used for matching, value is the domain name. This parameter will take effect only when conditions is left blank.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, the value can contain letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. • If type is set to PATH and compare_type to STARTS_WITH or EQUAL_TO, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+?=: \/()[]{}</code> • If type is set to METHOD, SOURCE_IP, HEADER, or QUERY_STRING, this parameter will not take effect, and conditions will be used to specify the key and value. <p>Minimum: 1 Maximum: 128</p>
provisioning_status	String	<p>Specifies the provisioning status of the forwarding rule.</p> <p>The value can only be ACTIVE (default), PENDING_CREATE, or ERROR.</p> <p>This parameter is unsupported. Please do not use it.</p>
invert	Boolean	<p>Specifies whether reverse matching is supported. The value is fixed at false. This parameter can be updated but will not take effect.</p>
id	String	<p>Specifies the forwarding policy ID.</p>
conditions	Array of RuleCondition objects	<p>Specifies the matching conditions of the forwarding rule. This parameter will take effect when enhance_l7policy_enable is set to .true. If conditions is specified, key and value will not take effect, and the value of this parameter will contain all conditions configured for the forwarding rule. The keys in the list must be the same, whereas each value must be unique.</p>

Parameter	Type	Description
created_at	String	Specifies the time when the forwarding rule was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
updated_at	String	Specifies the time when the forwarding rule was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).

Table 4-458 RuleCondition

Parameter	Type	Description
key	String	<p>Specifies the key of match item.</p> <ul style="list-style-type: none">• If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is left blank.• If type is set to HEADER, key indicates the name of the HTTP header parameter. The value can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_).• If type is set to QUERY_STRING, key indicates the name of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({}), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. <p>All keys in the conditions list in the same rule must be the same.</p> <p>Minimum: 1</p> <p>Maximum: 128</p>

Parameter	Type	Description
value	String	<p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), <i>and must start with a letter, digit, or asterisk ()</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. • If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+?,=!: /() []{}</code> • If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP 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 1 character. • If type is set to QUERY_STRING, key indicates the name of the query parameter, and value 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 (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value indicates the source IP address of the request. The value is an IPv4

Parameter	Type	Description
		or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.] All values of the condition list in a forwarding rule must be unique. Minimum: 1 Maximum: 128

Example Requests

Querying 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"
}
```

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.15.4 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 4-459 Path Parameters

Parameter	Mandatory	Type	Description
l7policy_id	Yes	String	Specifies the forwarding policy ID.
l7rule_id	Yes	String	Specifies the forwarding rule ID.
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-460 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-461 Request body parameters

Parameter	Mandatory	Type	Description
rule	Yes	UpdateL7RuleOption object	Specifies the forwarding rule.

Table 4-462 UpdateL7RuleOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the forwarding rule. The default value is true . This parameter is unsupported. Please do not use it.

Parameter	Mandatory	Type	Description
compare_type	No	String	<p>Specifies how requests are matched with the forwarding rule. Values:</p> <ul style="list-style-type: none"> • EQUAL_TO: exact match. • REGEX: regular expression match • STARTS_WITH: prefix match <p>Note:</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, the value can only be EQUAL_TO, and asterisks (*) can be used as wildcard characters. • If type is set to PATH, the value can be REGEX, STARTS_WITH, or EQUAL_TO. • If type is set to METHOD or SOURCE_IP, the value can only be EQUAL_TO. • If type is set to HEADER or QUERY_STRING, the value can only be EQUAL_TO, asterisks (*) and question marks (?) can be used as wildcard characters.
invert	No	Boolean	<p>Specifies whether reverse matching is supported. The value can be true or false.</p> <p>This parameter is unsupported. Please do not use it.</p>
key	No	String	<p>Specifies the key of the match item. For example, if an HTTP header is used for matching, key is the name of the HTTP header parameter.</p> <p>This parameter is unsupported. Please do not use it.</p> <p>Minimum: 0 Maximum: 255</p>

Parameter	Mandatory	Type	Description
value	No	String	<p>Specifies the value of the match item. For example, if a domain name is used for matching, value is the domain name. This parameter will take effect only when conditions is left blank.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, the value can contain letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. • If type is set to PATH and compare_type to STARTS_WITH or EQUAL_TO, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~' ;@^-%#&\$. * +?,=!: \ () [] { }</code> • If type is set to METHOD, SOURCE_IP, HEADER, or QUERY_STRING, this parameter will not take effect, and conditions will be used to specify the key and value. <p>Minimum: 1 Maximum: 128</p>

Parameter	Mandatory	Type	Description
conditions	No	Array of UpdateRuleCondition objects	Specifies the matching conditions of the forwarding rule. This parameter will take effect when enhance_l7policy_enable is set to .true . If conditions is specified, key and value will not take effect, and the value of this parameter will contain all conditions configured for the forwarding rule. The keys in the list must be the same, whereas each value must be unique.

Table 4-463 UpdateRuleCondition

Parameter	Mandatory	Type	Description
key	No	String	<p>Specifies the key of match item.</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is left blank. If type is set to HEADER, key indicates the name of the HTTP header parameter. The value can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_). If type is set to QUERY_STRING, key indicates the name of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({ }), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. <p>All keys in the conditions list in the same rule must be the same.</p> <p>Minimum: 1 Maximum: 128</p>

Parameter	Mandatory	Type	Description
value	No	String	<p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), and <i>must start with a letter, digit, or asterisk (^)</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. • If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~!;@^-%#&\$.*+? ,=!: /() [] {}</code> • If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP 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 1 character. • If type is set to QUERY_STRING, key indicates the name of the

Parameter	Mandatory	Type	Description
			<p>query parameter, and value 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 (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character.</p> <ul style="list-style-type: none"> • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value 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.] <p>All values of the condition list in a forwarding rule must be unique.</p> <p>Minimum: 1 Maximum: 128</p>

Response Parameters

Status code: 200

Table 4-464 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
rule	L7Rule object	Specifies the forwarding rule.

Table 4-465 L7Rule

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the forwarding rule. The default value is true . This parameter is unsupported. Please do not use it.
compare_type	String	Specifies how requests are matched with the domain name or URL. <ul style="list-style-type: none">• If type is set to HOST_NAME, this parameter can only be set to EQUAL_TO.• If type is set to PATH, the value can be REGEX, STARTS_WITH, or EQUAL_TO.
key	String	Specifies the key of the match content. Minimum: 1 Maximum: 255
project_id	String	Specifies the project ID.

Parameter	Type	Description
type	String	<p>Specifies the type of the forwarding rule. The value can be one of the following:</p> <ul style="list-style-type: none"> • HOST_NAME: A domain name will be used for matching. • PATH: A URL will be used for matching. • METHOD: An HTTP request method will be used for matching. • HEADER: The request header will be used for matching. • QUERY_STRING: A query string will be used for matching. • SOURCE_IP: The source IP address will be used for matching. <p>Note: If type is set to HOST_NAME, PATH, METHOD, and SOURCE_IP, only one forwarding rule can be created for each type. If type is set to HEADER and QUERY_STRING, multiple forwarding rules can be created for each type.</p>
value	String	<p>Specifies the value of the match item. For example, if a domain name is used for matching, value is the domain name. This parameter will take effect only when conditions is left blank.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, the value can contain letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. • If type is set to PATH and compare_type to STARTS_WITH or EQUAL_TO, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~'!@^-%#&\$.*+?,=:\ /() [] {}</code> • If type is set to METHOD, SOURCE_IP, HEADER, or QUERY_STRING, this parameter will not take effect, and conditions will be used to specify the key and value. <p>Minimum: 1 Maximum: 128</p>

Parameter	Type	Description
provisioning_status	String	Specifies the provisioning status of the forwarding rule. The value can only be ACTIVE (default), PENDING_CREATE , or ERROR . This parameter is unsupported. Please do not use it.
invert	Boolean	Specifies whether reverse matching is supported. The value is fixed at false . This parameter can be updated but will not take effect.
id	String	Specifies the forwarding policy ID.
conditions	Array of RuleCondition objects	Specifies the matching conditions of the forwarding rule. This parameter will take effect when enhance_l7policy_enable is set to .true . If conditions is specified, key and value will not take effect, and the value of this parameter will contain all conditions configured for the forwarding rule. The keys in the list must be the same, whereas each value must be unique.
created_at	String	Specifies the time when the forwarding rule was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
updated_at	String	Specifies the time when the forwarding rule was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).

Table 4-466 RuleCondition

Parameter	Type	Description
key	String	<p>Specifies the key of match item.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is left blank. • If type is set to HEADER, key indicates the name of the HTTP header parameter. The value can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_). • If type is set to QUERY_STRING, key indicates the name of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({ }), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. <p>All keys in the conditions list in the same rule must be the same.</p> <p>Minimum: 1</p> <p>Maximum: 128</p>

Parameter	Type	Description
value	String	<p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), <i>and must start with a letter, digit, or asterisk ()</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. • If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+?,=!: /() []{}</code> • If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP 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 1 character. • If type is set to QUERY_STRING, key indicates the name of the query parameter, and value 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 (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value indicates the source IP address of the request. The value is an IPv4

Parameter	Type	Description
		or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.] All values of the condition list in a forwarding rule must be unique. Minimum: 1 Maximum: 128

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"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.15.5 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 4-467 Path Parameters

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 Parameters

Table 4-468 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

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

Status Codes

Status Code	Description
204	Successful request.

Error Codes

See [Error Codes](#).

4.16 Log

4.16.1 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 4-469 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-470 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-471 Request body parameters

Parameter	Mandatory	Type	Description
logtank	Yes	CreateLogtankOption object	Specifies the request parameter for creating a log.

Table 4-472 CreateLogtankOption

Parameter	Mandatory	Type	Description
loadbalancer_id	Yes	String	Specifies the load balancer ID. Minimum: 1 Maximum: 36
log_group_id	Yes	String	Specifies the log group ID. This parameter is available for all services other than ELB. Minimum: 1 Maximum: 36
log_topic_id	Yes	String	Specifies the ID of the log subscription topic. This parameter is available for all services other than ELB. Minimum: 1 Maximum: 36

Response Parameters

Status code: 201

Table 4-473 Response body parameters

Parameter	Type	Description
logtank	Logtank object	Provides supplementary information.
request_id	String	Specifies the request ID. The value is automatically generated.

Table 4-474 Logtank

Parameter	Type	Description
id	String	Specifies the log ID.
project_id	String	Specifies the ID of a load balancer.
loadbalancer_id	String	Specifies the ID of a load balancer.
log_group_id	String	Specifies the log group ID.
log_topic_id	String	Specifies the log topic ID.

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"
  }
}
```

Status Codes

Status Code	Description
201	Created

Error Codes

See [Error Codes](#).

4.16.2 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 4-475 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.

Table 4-476 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records on each page. Minimum: 0 Maximum: 2000 Default: 2000
marker	No	String	Specifies the ID of the last record on the previous page. Note: <ul style="list-style-type: none">This parameter must be used together with limit.If this parameter is not specified, the first page will be queried.This parameter cannot be left blank or set to an invalid ID.

Parameter	Mandatory	Type	Description
page_reverse	No	Boolean	<p>Specifies whether to use reverse query. Values:</p> <ul style="list-style-type: none"> • true: Query the previous page. • false (default): Query the next page. <p>Note:</p> <ul style="list-style-type: none"> • This parameter must be used together with limit. • If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker.
enterprise_project_id	No	Array	<p>Specifies the enterprise project ID.</p> <p>Multiple IDs can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p>
id	No	Array	<p>Specifies the ID of the log tank.</p> <p>Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i>.</p>
loadbalancer_id	No	Array	<p>Specifies the ID of a load balancer.</p> <p>Multiple IDs can be queried in the format of <i>loadbalancer_id=xxx&loadbalancer_id=xxx</i>.</p>
log_group_id	No	Array	<p>Specifies the log group ID.</p> <p>Multiple IDs can be queried in the format of <i>log_group_id=xxx&log_group_id=xxx</i>.</p>
log_topic_id	No	Array	<p>Specifies the log topic ID.</p> <p>Multiple IDs can be queried in the format of <i>log_topic_id=xxx&log_topic_id=xxx</i>.</p>

Request Parameters

Table 4-477 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-478 Response body parameters

Parameter	Type	Description
logtanks	Array of Logtank objects	Provides supplementary information.
page_info	PageInfo object	Specifies pagination information about the load balancer.
request_id	String	Specifies the request ID. The value is automatically generated.

Table 4-479 Logtank

Parameter	Type	Description
id	String	Specifies the log ID.
project_id	String	Specifies the ID of a load balancer.
loadbalancer_id	String	Specifies the ID of a load balancer.
log_group_id	String	Specifies the log group ID.
log_topic_id	String	Specifies the log topic ID.

Table 4-480 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result.

Parameter	Type	Description
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

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  
  }  
}
```

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.16.3 Viewing Details of a Log

Function

This API is used to view details of a log.

Calling Method

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

URI

GET /v3/{project_id}/elb/logtanks/{logtank_id}

Table 4-481 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
logtank_id	Yes	String	Specifies the log ID.

Request Parameters

Table 4-482 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

Status code: 200

Table 4-483 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. The value is automatically generated.
logtank	Logtank object	Provides supplementary information.

Table 4-484 Logtank

Parameter	Type	Description
id	String	Specifies the log ID.
project_id	String	Specifies the ID of a load balancer.
loadbalancer_id	String	Specifies the ID of a load balancer.

Parameter	Type	Description
log_group_id	String	Specifies the log group ID.
log_topic_id	String	Specifies the log topic ID.

Example Requests

Viewing 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"  
}
```

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.16.4 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 4-485 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
logtank_id	Yes	String	Specifies the log ID.

Request Parameters

Table 4-486 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Table 4-487 Request body parameters

Parameter	Mandatory	Type	Description
logtank	Yes	UpdateLogtankOption	Specifies the request parameter for updating a log object

Table 4-488 UpdateLogtankOption

Parameter	Mandatory	Type	Description
log_group_id	No	String	Specifies the log group ID. This parameter is available for all services other than ELB. Minimum: 1 Maximum: 36
log_topic_id	No	String	Specifies the ID of the log subscription topic. This parameter is available for all services other than ELB. Minimum: 1 Maximum: 36

Response Parameters

Status code: 200

Table 4-489 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the response body to the request for updating a log.
logtank	Logtank object	Specifies the log details.

Table 4-490 Logtank

Parameter	Type	Description
id	String	Specifies the log ID.
project_id	String	Specifies the ID of a load balancer.
loadbalancer_id	String	Specifies the ID of a load balancer.
log_group_id	String	Specifies the log group ID.
log_topic_id	String	Specifies the log topic ID.

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"  
}
```

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.16.5 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 4-491 Path Parameters

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
logtank_id	Yes	String	Specifies the log ID.

Request Parameters

Table 4-492 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the token used for IAM authentication.

Response Parameters

None

Example Requests

Deleting a log

```
DELETE https://{ELB_Endpoint}/v3/060576798a80d5762fafc01a9b5eedc7/elb/logtanks/  
603e507f-3e18-498b-9460-01a3b6c28fc5
```

Example Responses

None

Status Codes

Status Code	Description
204	No Content

Error Codes

See [Error Codes](#).

5 Examples

5.1 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-86f7-561d757dfcee", // 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](#).

5.2 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`.
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"
}
```

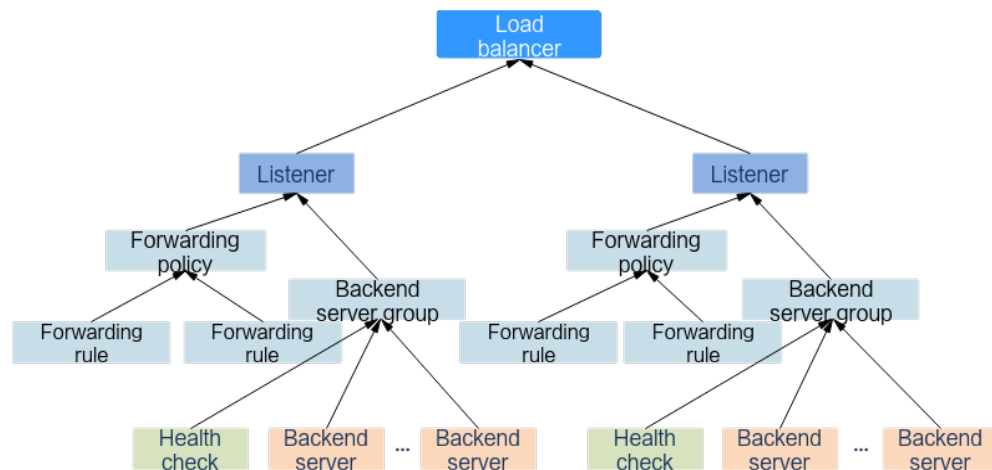
- If the request is abnormal, locate the fault by referring to [Error Codes](#).

5.3 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 5-1](#) shows the associated resources.

Figure 5-1 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](#).

5.4 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](#).

6 Permissions and Supported Actions

6.1 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.

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.

6.2 Supported Actions (V2)

6.2.1 Load Balancer

Permi ssion	API	Action	IAM Project	Enterprise Project
Creat es a load balan cer	POST /v2/ {project_id}/elb/ loadbalancers	elb:loadbalanc ers:create	√	√
Queri es a load balan cer	GET /v2/ {project_id}/elb/ loadbalancers/ {loadbalancer_id}	elb:loadbalanc ers:get	√	√
Queri es the status tree of a load balan cer	GET /v2/ {project_id}/elb/ loadbalancers/ {loadbalancer_id}/ statuses	elb:loadbalanc ers:get	√	√
Queri es load balan cers	GET /v2/ {project_id}/elb/ loadbalancers	elb:loadbalanc ers:list	√	√
Updat es a load balan cer	PUT /v2/ {project_id}/elb/ loadbalancers/ {loadbalancer_id}	elb:loadbalanc ers:put	√	√

Permission	API	Action	IAM Project	Enterprise Project
Deletes a load balancer	DELETE /v2/{project_id}/elb/loadbalancers/{loadbalancer_id}	elb:loadbalancers:delete	√	√

6.2.2 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	√	√

6.2.3 Backend Server Group

Permission	API	Action	IAM Project	Enterprise Project
Adds a backend server group	POST /v2/{project_id}/elb/pools	elb:pools:create	√	√

Permission	API	Action	IAM Project	Enterprise Project
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	√	√

6.2.4 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	√	√
Queries a backend server	GET /v2/{project_id}/elb/pools/{pool_id}/members/{member_id}	elb:members:get	√	√

Permission	API	Action	IAM Project	Enterprise Project
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	√	√

6.2.5 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	√	√
Deletes a health check	DELETE /v2/{project_id}/elb/healthmonitors/{healthmonitor_id}	elb:healthmonitors:delete	√	√

6.2.6 Forwarding Policy

Permission	API	Action	IAM Project	Enterprise 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	√	√

6.2.7 Forwarding Rule

Permission	API	Action	IAM Project	Enterprise Project
Creates a forwarding rule	POST /v2/{project_id}/elb/l7policies/{l7policy_id}/rules	elb:l7rules:create	√	√
Queries a forwarding rule	GET /v2/{project_id}/elb/l7policies/{l7policy_id}/rules/{l7rule_id}	elb:l7rules:get	√	√

Permission	API	Action	IAM Project	Enterprise Project
Queries forwarding rules	GET /v2/{project_id}/elb/l7policies/{l7policy_id}/rules	elb:l7rules:list	√	√
Updates a forwarding rule	PUT /v2/{project_id}/elb/l7policies/{l7policy_id}/rules/{l7rule_id}	elb:l7rules:put	√	√
Deletes a forwarding rule	DELETE /v2/{project_id}/elb/l7policies/{l7policy_id}/rules/{l7rule_id}	elb:l7rules:delete	√	√

6.2.8 Whitelist

Permission	API	Action	IAM Project	Enterprise Project
Adds a whitelist	POST /v2/{project_id}/elb/whitelists	elb:whitelists:create	√	√
Queries a whitelist	GET /v2/{project_id}/elb/whitelists/{whitelist_id}	elb:whitelists:get	√	√
Queries whitelists	GET /v2/{project_id}/elb/whitelists	elb:whitelists:list	√	√
Modifies a whitelist	PUT /v2/{project_id}/elb/whitelists/{whitelist_id}	elb:whitelists:put	√	√
Deletes a whitelist	DELETE /v2/{project_id}/elb/whitelists/{whitelist_id}	elb:whitelists:delete	√	√

6.2.9 SSL Certificate

Permission	API	Action	IAM Project	Enterprise Project
Creates a certificate	POST /v2/{project_id}/elb/certificates	elb:certificates:create	√	√
Queries a certificate	GET /v2/{project_id}/elb/certificates/{certificate_id}	elb:certificates:get	√	√
Queries certificates	GET /v2/{project_id}/elb/certificates	elb:certificates:list	√	√
Modifies a certificate	PUT /v2/{project_id}/elb/certificates/{certificate_id}	elb:certificates:put	√	√
Deletes a certificate	DELETE /v2/{project_id}/elb/certificates/{certificate_id}	elb:certificates:delete	√	√

6.2.10 Quota

Permission	API	Action	IAM Project	Enterprise Project
Queries default resource quotas	GET /v2/{project_id}/elb/quotas/defaults	elb:quotas:list	√	x

Permission	API	Action	IAM Project	Enterprise Project
Queries current resource quotas	GET /v2/{project_id}/elb/quotas	elb:quotas:list	√	x

6.2.11 Tag

Permission	API	Action	IAM Project	Enterprise Project
Queries all tags of a load balancer.	GET /v2.0/{project_id}/loadbalancers/{loadbalancer_id}/tags	elb:loadbalancerTags:get	√	x
Adds or deletes load balancer tags in batches.	POST /v2.0/{project_id}/loadbalancers/{loadbalancer_id}/tags/action	elb:loadbalancerTags:create	√	x
Queries tags of all load balancers in a specific project.	GET /v2.0/{project_id}/loadbalancers/tags	elb:loadbalancerTags:get	√	x
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

Permission	API	Action	IAM Project	Enterprise Project
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

6.2.12 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.

6.3 Supported Actions (V3)

6.3.1 Load Balancer

Permission	API	Action	IAM Project	Enterprise Project
Creates a load balancer	POST /v3/{project_id}/elb/loadbalancers	elb:loadbalancers:create	√	√
Queries a load balancer	GET /v3/{project_id}/elb/loadbalancers/{loadbalancer_id}	elb:loadbalancers:get	√	√
Queries the status tree of a load balancer	GET /v3/{project_id}/elb/loadbalancers/{loadbalancer_id}/statuses	elb:loadbalancers:get	√	√
Queries load balancers	GET /v3/{project_id}/elb/loadbalancers	elb:loadbalancers:list	√	√
Updates a load balancer	PUT /v3/{project_id}/elb/loadbalancers/{loadbalancer_id}	elb:loadbalancers:put	√	√
Deletes a load balancer	DELETE /v3/{project_id}/elb/loadbalancers/{loadbalancer_id}	elb:loadbalancers:delete	√	√

6.3.2 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	√	√

6.3.3 Backend Server Group

Permission	API	Action	IAM Project	Enterprise Project
Creates a backend server group	POST /v3/{project_id}/elb/pools	elb:pools:create	√	√
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	√	√

Permission	API	Action	IAM Project	Enterprise Project
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	√	√

6.3.4 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	√	√
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	√	√

6.3.5 Health Check

Permissi on	API	Action	IAM Project	Enterprise Project
Configur es 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	√	√

6.3.6 Forwarding Policy

Permis sion	API	Action	IAM Project	Enterprise Project
Adds a forward ing policy	POST /v3/{project_id}/elb/l7policies	elb:l7policies:create	√	√
Queries a forward ing policy	GET /v3/{project_id}/elb/l7policies/{l7policy_id}	elb:l7policies:get	√	√
Queries forward ing policies	GET /v3/{project_id}/elb/l7policies	elb:l7policies:l ist	√	√

Permission	API	Action	IAM Project	Enterprise Project
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	√	√

6.3.7 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	√	√
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	√	√

6.3.8 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	√	√
Deletes an IP address group	DELETE /v3/{project_id}/elb/ipgroups/{ipgroup_id}	elb:ipgroups:delete	√	√
Updates IP addresses in an IP address group	PUT /v3/{project_id}/elb/ipgroups/{ipgroup_id}/iplist/create-or-update	elb:ipgroups:put	√	√
Deletes IP addresses in an IP address group	DELETE /v3/{project_id}/elb/ipgroups/{ipgroup_id}/iplist/batch-delete	elb:ipgroups:put	√	√

6.3.9 Certificate

Permission	API	Action	IAM Project	Enterprise Project
Creates a certificate	POST /v3/{project_id}/elb/certificates	elb:certificates:create	√	√
Queries a certificate	GET /v3/{project_id}/elb/certificates/{certificate_id}	elb:certificates:get	√	√
Queries certificates	GET /v3/{project_id}/elb/certificates	elb:certificates:list	√	√
Modifies a certificate	PUT /v3/{project_id}/elb/certificates/{certificate_id}	elb:certificates:put	√	√
Deletes a certificate	DELETE /v3/{project_id}/elb/certificates/{certificate_id}	elb:certificates:delete	√	√

6.3.10 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	√	√

Permi ssio n	API	Action	IAM Project	Enterprise Project
Queri es a custo m securi ty policy	GET /v3/{project_id}/elb/ security-policies/ {certificate_id}	elb:security - policies:get	√	√
Queri es custo m securi ty polici es	GET /v3/{project_id}/elb/ security-policies	elb:security - policies:list	√	√
Upda tes a custo m securi ty policy	PUT /v3/{project_id}/elb/ security-policies/ {certificate_id}	elb:security - policies:put	√	√
Delet es a custo m securi ty policy	DELETE /v3/{project_id}/elb/ security-policies/ {certificate_id}	elb:security - policies:del ete	√	√
Queri es syste m securi ty polici es	GET /v3/{project_id}/elb/ system-security-policies	elb:security - policies:list	√	√

6.3.11 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	√	√

6.3.12 API Version

Permission	API	Action	IAM Project	Enterprise Project
Queries the API version	GET /versions	elb:quotas:list	√	x

6.3.13 Availability Zone

Permission	API	Action	IAM Project	Enterprise Project
Queries AZs	GET /v3/{project_id}/elb/availability-zones	elb:availability-zones:list	√	√

6.3.14 Load Balancer Flavor

Permission	API	Action	IAM Project	Enterprise Project
Queries default resource quotas	GET /v3/{project_id}/elb/flavors	elb:flavors:list	√	x
Queries current resource quotas	GET /v3/{project_id}/elb/flavors/{flavor_id}	elb:flavors:get	√	x

6.3.15 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.

7 Appendix

7.1 Error Codes

Status Code	Error Codes	Error Message	Description	Solution
400	ELB.0002	RequestBody is null or empty,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	Api response is null or invaild.	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	Lb not exist.	The load balancer does not exist.	Check the load balancer ID.
400	ELB.1004	Query condition is not valid.	Invalid query condition.	Change the query condition.

Status Code	Error Codes	Error Message	Description	Solution
400	ELB.1005	Update request paramters error.	Failed to modify the load balancer.	Check the parameters.
400	ELB.1007	Query internal ELB error.	Failed to query details of the private network load balancer.	Contact customer service.
400	ELB.1008	There is at least one member under the lb.	Failed to delete the load balancer.	Change the parameter settings.
400	ELB.1010	Query elb quota error.	Failed to query the quota.	Contact customer service.
400	ELB.1011	Private_key or certificate content is not valid.	Invalid private or public key of the server certificate.	Enter a valid private or public key.
400	ELB.1012	Create tenant resource relation error.	Failed to create the relationship between resources and the user.	Contact customer service.
400	ELB.1013	Update resource tenant allocation failed, cloud eye warning rule exceeds.	Failed to modify the quota of a resource because the quota set in the Cloud Eye alarm rule is too large.	Contact customer service.
400	ELB.1014	Query resouce tenant relation failed.	Failed to query the relationship between resources and the user.	Contact customer service.
400	ELB.1015	Lb can not be updated.	Failed to modify the load balancer.	Check the parameters.

Status Code	Error Codes	Error Message	Description	Solution
400	ELB.1018	There is at least one member under the lb.	Failed to delete the load balancer because it has backend servers associated.	Remove the backend servers from the associated server group and delete the backend server group first.
400	ELB.1020	Lb ID is not correct.	Incorrect load balancer ID.	Change the parameter settings.
400	ELB.1021	Request parameters error, name invalid.	Invalid load balancer name.	Change the name.
400	ELB.1025	Udparte request parameters error, name is too long.	The load balancer name exceeds the length limit.	Change the name.
400	ELB.1031	Request parameters error, lb len description too long.	The load balancer description exceeds the length limit.	Change the description.
400	ELB.1035	Update request parameters error, name is not valid.	Invalid load balancer name.	Change the name.
400	ELB.1041	Request parameters error, lb type is not valid.	Invalid load balancer type.	Change the parameter settings.
400	ELB.1045	Update request parameters error, description too long.	The load balancer description exceeds the length limit.	Change the description.

Status Code	Error Codes	Error Message	Description	Solution
400	ELB.1051	Request parameters error, lb bandwidth is not valid.	Invalid bandwidth configured for the load balancer.	Modify the bandwidth.
400	ELB.1061	Request parameters error, lb vip_address and vip_subnet_id are nil.	The EIP or subnet ID is left blank.	Enter a valid EIP or subnet ID.
400	ELB.1071	Request parameters error, lb vip_address is not valid.	Invalid EIP.	Enter a valid EIP.
400	ELB.1081	Request parameters error, lb vpc_id is empty.	The VPC ID is left blank.	Enter a valid VPC ID.
400	ELB.1101	Vip address is exist.	The EIP already exists.	Enter another EIP.
400	ELB.1110	version not found.	The API version does not exist.	Contact customer service.
400	ELB.1201	Get Token failed	Failed to obtain the token.	Contact customer service.
400	ELB.1202	enterprise_project_id can not be empty	An error occurred during the verification of ep_id.	Check the enterprise project ID.
400	ELB.1204	Bind fail.	Failed to associate the load balancer with the enterprise project.	Contact customer service.

Status Code	Error Codes	Error Message	Description	Solution
400	ELB.2002	Delete member input param error.	Failed to remove the backend server because the parameters are invalid.	Change the parameter settings.
400	ELB.2003	Query member failed.	Failed to query the backend server.	Contact customer service.
400	ELB.2005	Update member failed.	Failed to update the backend server.	Contact customer service.
400	ELB.2010	Member listener ID length is not correct.	The listener ID exceeds the length limit.	Change the listener ID.
400	ELB.2011	Add member listener is not exist.	The listener does not exist.	Ensure that the listener exists.
400	ELB.2012	This member is not exist.	The backend server does not exist.	Ensure that the backend server exists.
400	ELB.2020	Member listener ID content is not correct.	Invalid listener ID.	Change the listener ID.
400	ELB.2021	Request parameters error, member address is null.	Invalid backend server IP address.	Check the backend server IP address.
400	ELB.3001	Create floating IP failed.	Failed to assign the EIP.	Contact customer service.
400	ELB.3002	Delete floating IP failed.	Failed to release the EIP.	Contact customer service.

Status Code	Error Codes	Error Message	Description	Solution
400	ELB.3003	Query floating IP failed.	Failed to query the EIP.	Contact customer service.
400	ELB.3004	Query floating IP list failed.	Failed to query EIPs.	Contact customer service.
400	ELB.4001	Create elastic IP failed.	Failed to assign the EIP.	Contact customer service.
400	ELB.4002	Delete elastic IP failed.	Failed to release the EIP.	Contact customer service.
400	ELB.4003	Query elastic IP failed.	Failed to query the EIP.	Contact customer service.
400	ELB.4004	Query elastic IP list failed.	Failed to query EIPs.	Contact customer service.
400	ELB.4005	Update elastic IP 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	Query 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	Update bandwidth failed.	Failed to modify the bandwidth.	Contact customer service.
400	ELB.5013	Private_key or certificate content is not valid.	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.	The certificate ID is not a 32-character string.	Enter a valid certificate ID.
400	ELB.5033	Failed to update certificate.	Failed to modify the certificate.	Contact customer service.

Status Code	Error Codes	Error Message	Description	Solution
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 user 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	Listener ID content is not correct.	Invalid listener ID.	Change the listener ID.
400	ELB.6011	Request parameters error, listener name too long.	The listener name exceeds the length limit.	Change the name.
400	ELB.6015	This listener property cannot be updated	The listener property cannot be modified.	Select a property that can be modified.
400	ELB.6021	Request parameters error, listener name is not valid.	Invalid listener name.	Change the name.

Status Code	Error Codes	Error Message	Description	Solution
400	ELB.6025	Update request parameters error, listener len name too long.	The listener name exceeds the length limit.	Change the name.
400	ELB.6030	Listener is not associated with loadbalancer id.	The listener does not belong to any load balancer.	Check the listener ID.
400	ELB.6031	Request parameters error, listener len description too long.	The listener description exceeds the length limit.	Change the description.
400	ELB.6035	Update request parameters error, listener name is not valid.	Invalid listener name.	Change the name.
400	ELB.6040	The loadbalancer that the listener belongs to is not exist.	The load balancer to which the listener is added does not exist.	Check the load balancer ID.
400	ELB.6041	Request parameters error, listener port is not in 1 ~ 65535.	Invalid port number.	Change the port number.
400	ELB.6045	Update request parameters error, listener len description too long.	The listener description exceeds the length limit.	Change the description.

Status Code	Error Codes	Error Message	Description	Solution
400	ELB.6051	Request parameters error, listener lb algorithm is not valid.	Invalid load balancing algorithm.	Change the load balancing algorithm.
400	ELB.6061	Request parameters error, listener protocol is not valid.	Invalid listener protocol.	Change the protocol.
400	ELB.6071	Request parameters error, listener backend protocol is not valid.	Invalid backend server 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	Listener_id must not be null.	The listener ID is left blank.	Change the listener ID.
400	ELB.7001	Healthcheck_interval is illegal.	Invalid query condition.	Change the query condition.
400	ELB.7002	Healthcheck delete condition is not valid.	Invalid query condition.	Change the query condition.
400	ELB.7004	Healthcheck query condition is not valid.	Invalid query condition.	Change the query condition.
400	ELB.7010	Healthcheck listener is not exist.	The listener with which the health check is associated does not exist.	Change the listener ID.

Status Code	Error Codes	Error Message	Description	Solution
400	ELB.7014	Healthcheck configuration not exist.	The health check does not exist.	Check the health check ID.
400	ELB.7020	This healthcheck is not exist.	The health check does not exist.	Change the health check ID.
400	ELB.8001	Create a SG error.	Failed to create the security group.	Contact customer service.
400	ELB.8101	Create VPC error.	Failed to create the VPC.	Contact customer service.
400	ELB.8102	Delete VPC error.	Failed to delete the VPC.	Contact customer service.
400	ELB.8103	Query VPC error.	Failed to query the VPC.	Contact customer service.
400	ELB.8201	Create subnet error.	Failed to create the subnet.	Contact customer service.
400	ELB.8202	Delete subnet error.	Failed to delete the subnet.	Contact customer service.
400	ELB.8203	Query subnet error.	Failed to query the subnet.	Contact customer service.
400	ELB.8902	Invalid input for '%s' is not in %s.	Invalid input parameters.	Check input parameters.
400	ELB.8909	Certificate with multi domain not supported by guaranteed listener.	Multiple domain certificate is not supported by dedicated loadbalancer.	Check input parameters.

Status Code	Error Codes	Error Message	Description	Solution
400	ELB.8938	The ip member just support when pool's protocol is %s.	Invalid input parameters.	Change the value of pool_id in url to other supported pool or pass parameter 'subnet_cidr_id' when create member.
400	ELB.8939	The loadbalancer's ip_target_enable must be true when add ip member.	Invalid input parameters.	Disable ip target of the loadbalancer or pass parameter 'subnet_cidr_id' when create member.
400	ELB.8950	Cannot allocate resource for the loadbalancer.	Cannot allocate resource for the loadbalancer.	Contact customer service.
400	ELB.8959	The %s flavor field does not support update from %s to %s.	Invalid input parameters when updating flavor.	Check input parameters.
400	ELB.9001	Interval ELB create VM error.	Failed to create the VM.	Contact customer service.
400	ELB.9002	Internal ELB delete VM error.	Failed to delete the VM.	Contact customer service.
400	ELB.9003	Internal ELB query VM error.	Failed to query details of the VM.	Contact customer service.
400	ELB.9006	Internal ELB update port fail.	Failed to update the port bound to the VM.	Contact customer service.
400	ELB.9007	Internal ELB bind port fail.	Failed to bind the port to the VM.	Contact customer service.

Status Code	Error Codes	Error Message	Description	Solution
400	ELB.9023	Internal ELB get image error.	Failed to query the image.	Contact customer service.
400	ELB.9033	Internal ELB get flavour error.	Failed to query the VM specifications.	Contact customer service.
400	ELB.9043	Internal ELB get interface error.	Failed to query the port bound to the VM.	Contact customer service.
400	ELB.9061	Internal ELB query topic fail.	Failed to query the SMN topic.	Contact customer service.
400	ELB.9062	Internal ELB create topic fail.	Failed to create the SMN topic.	Contact customer service.
400	ELB.9063	Internal ELB query subscription fail.	Failed to query the SMN subscription.	Contact customer service.
400	ELB.9064	Internal ELB create subscription fail.	Failed to create the SMN subscription.	Contact customer service.
400	ELB.9800	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.
400	ELB.9801	Not be list action, 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.

Status Code	Error Codes	Error Message	Description	Solution
400	ELB.9805	RequestBody listener[protocol] 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	No enough quota for resource.	Contact customer to expand quota.
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	Lb number larger than 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	Token is error, Authentication required.	The token is empty.	Enter a token that has not expired.
403	ELB.2001	Create member failed, the total amount of members exceeds the system setting.	Failed to add the backend server because the number of backend servers reaches the limit.	Check the maximum number of backend servers.

Status Code	Error Codes	Error Message	Description	Solution
403	ELB.6091	Request lb has more than user listener quota.	The number of listeners reaches the limit.	Request a higher quota or delete listeners that are no longer needed.
403	ELB.8962	tenant %s does not support %s.	The feature is not supported.	Contact customer service.
403	ELB.9802	Policy doesn't allow elb:logtanks:create to be performed.	Authentication failed.	Ensure that you have the permission to perform this operation.
403	ELB.9803	Policy doesn't allow elb:loadbalancers:list to be performed.	Authentication failed.	Ensure that you have the permission to perform this operation.
403	ELB.9804	Policy doesn't allow elb:loadbalancers:list to be performed.	Authentication failed.	Ensure that you have the permission to perform this operation.
404	ELB.1002	Find lb failed.	The load balancer does not exist.	Change the load balancer ID.
404	ELB.8904	%s %s could not be found.	Resource could not be found.	Please check the parameters.
409	ELB.8905	Quota exceeded for resources: %s	No enough quota for resource.	Contact customer to expand quota.
409	ELB.8907	Data conflict. For details about the error, see the returned information.	Data conflict. For details about the error, see the returned information.	Check your request based on the error message.
500	ELB.8906	Internal error. For details about the error, see the returned information.	Internal error. For details about the error, see the returned information.	Contact customer service.

7.2 Status Codes

Table 7-1 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 7-2 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.
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.

Status Code	Message	Description
		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.

7.3 Monitoring Metrics

Overview

This section describes the namespace, the metrics that can be monitored by Cloud Eye, and dimensions of these metrics. You can use APIs provided by Cloud Eye to query the metrics of a monitored object and generated alarms.

Namespace

SYS.ELB

Metrics

Table 7-3 Metrics supported by ELB

Metric ID	Name	Description	Value	Monitored Object	Monitoring Period (Raw Data)
m1_cps	Concurrent Connections	<p>Load balancing at Layer 4: total number of TCP and UDP connections from the monitored object to backend servers</p> <p>Load balancing at Layer 7: total number of TCP connections from the clients to the monitored object</p> <p>Unit: N/A</p>	≥ 0	<ul style="list-style-type: none"> • Dedicated load balancer • Shared load balancer • Dedicated load balancer - listener • Shared load balancer - listener 	1 minute
m2_act_conn	Active Connections	<p>Number of TCP and UDP connections in the ESTABLISHED state between the monitored object and backend servers</p> <p>You can run the following command to view the connections (both Windows and Linux servers): netstat -an</p> <p>Unit: N/A</p>	≥ 0	<ul style="list-style-type: none"> • Shared load balancer - listener 	

Metric ID	Name	Description	Value	Monitored Object	Monitoring Period (Raw Data)
m3_inact_conn	Inactive Connections	Number of TCP connections between the monitored object and backend servers except those in the ESTABLISHED state You can run the following command to view the connections (both Windows and Linux servers): netstat -an Unit: N/A	≥ 0		
m4_ncps	New Connections	Number of connections established between clients and the monitored object per second Unit: Count/s	≥ 0/ second		
m5_in_pps	Incoming Packets	Number of packets received by the monitored object per second Unit: Packet/s	≥ 0/ second		
m6_out_pps	Outgoing Packets	Number of packets sent from the monitored object per second Unit: Packet/s	≥ 0/ second		
m7_in_Bps	Inbound Rate	Traffic used for accessing the monitored object from the Internet per second Unit: byte/s	≥ 0 bytes/s		

Metric ID	Name	Description	Value	Monitored Object	Monitoring Period (Raw Data)
m8_out_Bps	Outbound Rate	Traffic used by the monitored object to access the Internet per second Unit: byte/s	≥ 0 bytes/s		
m9_abnormal_servers	Unhealthy Servers	Number of unhealthy backend servers associated with the monitored object Unit: N/A	≥ 0	<ul style="list-style-type: none"> Dedicated load balancer Shared load balancer 	1 minute
ma_normal_servers	Healthy Servers	Number of healthy backend servers associated with the monitored object Unit: N/A	≥ 0		
m1e_server_rps	Reset Packets from Backend Servers	(TCP listener metrics) Number of reset packets forwarded by the monitored object from backend servers to clients Unit: Packet/s	≥ 0 /second	<ul style="list-style-type: none"> Shared load balancer Shared load balancer - listener 	1 minute
m21_client_rps	Reset Packets from Clients	(TCP listener metrics) Number of reset packets forwarded by the monitored object from clients to backend servers Unit: Packet/s	≥ 0 /second		
m1f_lvs_rps	Reset Packets from Load Balancers	(TCP listener metrics) Number of reset packets generated by the monitored object per second Unit: Packet/s	≥ 0 /second		

Metric ID	Name	Description	Value	Monitored Object	Monitoring Period (Raw Data)
m22_in_bandwidth	Inbound Bandwidth	Bandwidth used for accessing the monitored object from the Internet Unit: bit/s	≥ 0 bit/s	<ul style="list-style-type: none"> Shared load balancer Shared load balancer - listener 	1 minute
m23_out_bandwidth	Outbound Bandwidth	Bandwidth used by the monitored object to access the Internet Unit: bit/s	≥ 0 bit/s		
mb_l7_queries	Layer-7 Query Rate	Number of requests the monitored object receives per second Unit: Query/s	≥ 0 query/s	<ul style="list-style-type: none"> Dedicated load balancer Shared load balancer Dedicated load balancer - listener Shared load balancer - listener 	1 minute
md_l7_http_3xx	Layer-7 3xx Status Codes	Number of 3xx status codes returned by the monitored object Unit: Count/s	≥ 0 /second	<ul style="list-style-type: none"> Load balancer Listener 	1 minute

Metric ID	Name	Description	Value	Monitored Object	Monitoring Period (Raw Data)
mc_l7_http_2xx	Layer-7 2xx Status Codes	Number of 2xx status codes returned by the monitored object Unit: Count/s	≥ 0/second	<ul style="list-style-type: none"> • Dedicated load balancer • Shared load balancer • Dedicated load balancer - listener • Shared load balancer - listener 	1 minute
me_l7_http_4xx	Layer-7 4xx Status Codes	Number of 4xx status codes returned by the monitored object Unit: Count/s	≥ 0/second		
mf_l7_http_5xx	Layer-7 5xx Status Codes	Number of 5xx status codes returned by the monitored object Unit: Count/s	≥ 0/second		
m10_l7_http_other_status	Layer-7 Other Status Codes	Number of status codes returned by the monitored object except 2xx, 3xx, 4xx, and 5xx status codes Unit: Count/s	≥ 0/second		
m11_l7_http_404	Layer-7 404 Not Found	Number of 404 Not Found status codes returned by the monitored object Unit: Count/s	≥ 0/second		
m12_l7_http_499	Layer-7 499 Client Closed Request	Number of 499 Client Closed Request status codes returned by the monitored object Unit: Count/s	≥ 0/second		
m13_l7_http_502	Layer-7 502 Bad Gateway	Number of 502 Bad Gateway status codes returned by the monitored object Unit: Count/s	≥ 0/second		

Metric ID	Name	Description	Value	Monitored Object	Monitoring Period (Raw Data)
m14_l7_rt	Average Layer-7 Response Time	<p>Average response time of the monitored object</p> <p>The response time starts when the monitored object receives requests from the clients and ends when it returns all responses to the clients.</p> <p>Unit: ms</p> <p>NOTE The average response time it takes to establish a WebSocket connection may be very high. This metric cannot be used as a reference.</p>	≥ 0 ms		
m15_l7_upstream_4xx	4xx Status Codes Backend	<p>Number of 4xx status codes returned by the monitored object</p> <p>Unit: Count/s</p>	≥ 0/second	<ul style="list-style-type: none"> • Dedicated load balancer • Shared load balancer 	1 minute
m16_l7_upstream_5xx	5xx Status Codes Backend	<p>Number of 5xx status codes returned by the monitored object</p> <p>Unit: Count/s</p>	≥ 0/second	<ul style="list-style-type: none"> • Dedicated load balancer - listener • Shared load balancer - listener 	

Metric ID	Name	Description	Value	Monitored Object	Monitoring Period (Raw Data)
m17_l7_upstream_rt	Average Server Response Time	<p>Average response time of backend servers</p> <p>The response time starts when the monitored object routes the requests to the backend server and ends when the monitored object receives a response from the backend server.</p> <p>Unit: ms</p> <p>NOTE The average response time it takes to establish a WebSocket connection may be very high. This metric cannot be used as a reference.</p>	≥ 0 ms		
m1a_l7_upstream_rt_max	Maximum Server Response Time	<p>Maximum response time of backend servers (This metric is available only when the frontend protocol is HTTP or HTTPS.)</p> <p>The response time starts when the monitored object routes the requests to the backend server and ends when the monitored object receives a response from the backend server.</p> <p>Unit: ms</p>	≥ 0 ms	<ul style="list-style-type: none"> • Dedicated load balancer • Shared load balancer • Dedicated load balancer - listener • Shared load balancer - listener 	1 minute

Metric ID	Name	Description	Value	Monitored Object	Monitoring Period (Raw Data)
m1b_l7_upstream_rt_min	Minimum Server Response Time	<p>Minimum response time of backend servers (This metric is available only when the frontend protocol is HTTP or HTTPS.)</p> <p>The response time starts when the monitored object routes the requests to the backend server and ends when the monitored object receives a response from the backend server.</p> <p>Unit: ms</p>	≥ 0 ms		
m1c_l7_rt_max	Maximum Layer-7 Response Time	<p>Maximum response time of the monitored object (This metric is available only when the frontend protocol is HTTP or HTTPS.)</p> <p>The response time starts when the monitored object receives requests from the clients and ends when it returns all responses to the clients.</p> <p>Unit: ms</p>	≥ 0 ms	<ul style="list-style-type: none"> • Dedicated load balancer • Shared load balancer • Dedicated load balancer - listener • Shared load balancer - listener 	1 minute

Metric ID	Name	Description	Value	Monitored Object	Monitoring Period (Raw Data)
m1d_l7_rt_min	Minimum Layer-7 Response Time	Minimum response time of the monitored object (This metric is available only when the frontend protocol is HTTP or HTTPS.) The response time starts when the monitored object receives requests from the clients and ends when it returns all responses to the clients. Unit: ms	≥ 0 ms		
l7_con_usage	Layer-7 Concurrent Connection Usage	Ratio of HTTP and HTTPS connections established between the monitored object and backend servers per second, to the maximum number of concurrent connections allowed per second Unit: percent (%)	$\geq 0\%$	Dedicated load balancer	1 minute

Metric ID	Name	Description	Value	Monitored Object	Monitoring Period (Raw Data)
l7_in_bps_usage	Layer-7 Inbound Bandwidth Usage	<p>Ratio of the bandwidth that the monitored object uses to return response to clients over HTTP and HTTPS, to the maximum outbound bandwidth allowed</p> <p>Unit: percent (%)</p> <p>CAUTION If the inbound bandwidth usage reaches 100%, the load balancer performance has reached the upper limit. If the inbound bandwidth keeps higher than the bandwidth that the load balancer can provide, the service availability cannot be guaranteed.</p>	≥ 0%		
l7_out_bps_usage	Layer-7 Outbound Bandwidth Usage	<p>Ratio of the bandwidth that the monitored object uses to return response to clients over HTTP and HTTPS, to the maximum outbound bandwidth allowed</p> <p>Unit: percent (%)</p> <p>CAUTION If the outbound bandwidth usage reaches 100%, the load balancer performance has reached the upper limit. If the outbound bandwidth keeps higher than the bandwidth that the load balancer can provide, the service availability cannot be guaranteed.</p>	≥ 0%		

Metric ID	Name	Description	Value	Monitored Object	Monitoring Period (Raw Data)
l7_ncps_usage	Layer-7 New Connection Usage	Ratio of HTTP and HTTPS connections established between clients and the monitored object per second, to the maximum number of new connections allowed per second Unit: percent (%)	≥ 0%		
l7_qps_usage	Layer 7 QPS Usage	Ratio of HTTP and HTTPS queries per second on the monitored object, to the maximum number of queries allowed per second Unit: percent (%)	≥ 0%		
m18_l7_upstream_2xx	2xx Status Codes_Backend	Number of 2xx status codes returned by the monitored object (This metric is available only when the frontend protocol is HTTP or HTTPS.) Unit: Count/s	≥ 0/second	<ul style="list-style-type: none"> Dedicated load balancer - backend server group Shared load balancer - backend server group 	1 minute
m19_l7_upstream_3xx	3xx Status Codes_Backend	Number of 3xx status codes returned by the monitored object (This metric is available only when the frontend protocol is HTTP or HTTPS.) Unit: Count/s	≥ 0/second	<ul style="list-style-type: none"> Shared load balancer - backend server group 	

Metric ID	Name	Description	Value	Monitored Object	Monitoring Period (Raw Data)
m25_l7_resp_Bps	Backend Server Response Bandwidth	The bandwidth that the monitored object uses to return response to clients Unit: bit/s NOTE When HTTP/2 is enabled for a listener, this metric cannot be used as a reference.	≥ 0 bit/s		
m24_l7_req_Bps	Backend Server Request Bandwidth	The bandwidth that the monitored object uses to receive requests from clients Unit: bit/s NOTE When HTTP/2 is enabled for a listener, this metric cannot be used as a reference.	≥ 0 bit/s		
l4_con_usage	Layer-4 Concurrent Connection Usage	Ratio of TCP and UDP connections established between the monitored object and backend servers per second, to the maximum number of concurrent connections allowed per second Unit: percent (%)	$\geq 0\%$	Dedicated load balancer	1 minute

Metric ID	Name	Description	Value	Monitored Object	Monitoring Period (Raw Data)
l4_in_bps_usage	Layer-4 Inbound Bandwidth Usage	<p>Ratio of the bandwidth that the monitored object uses to receive requests from clients over TCP and UDP, to the maximum inbound bandwidth allowed</p> <p>Unit: percent (%)</p> <p>CAUTION If the inbound bandwidth usage reaches 100%, the load balancer performance has reached the upper limit. If the inbound bandwidth keeps higher than the bandwidth that the load balancer can provide, the service availability cannot be guaranteed.</p>	≥ 0%		
l4_out_bps_usage	Layer-4 Outbound Bandwidth Usage	<p>Ratio of the bandwidth that the monitored object uses to return response to clients over TCP and UDP, to the maximum outbound bandwidth allowed</p> <p>Unit: percent (%)</p> <p>CAUTION If the outbound bandwidth usage reaches 100%, the load balancer performance has reached the upper limit. If the outbound bandwidth keeps higher than the bandwidth that the load balancer can provide, the service availability cannot be guaranteed.</p>	≥ 0%		

Metric ID	Name	Description	Value	Monitored Object	Monitoring Period (Raw Data)
l4_ncps_usage	Layer-4 New Connection Usage	Ratio of TCP and UDP connections established between clients and the monitored object per second, to the maximum number of new connections allowed per second Unit: percent (%)	≥ 0%		

a: If a service is being monitored from multiple dimensions, include all dimensions when you use APIs to query the metrics.

- Example of querying a single metric from both dimensions:
dim.0=lbaas_instance_id,223e9eed-2b02-4ed2-a126-7e806a6fee1f&dim.1=lbaas_listener_id,3baa7335-8886-4867-8481-7cbb a967a917

- Example of querying metrics in batches from both dimensions:

```
"dimensions": [
  {
    "name": "lbaas_instance_id",
    "value": "223e9eed-2b02-4ed2-a126-7e806a6fee1f"
  },
  {
    "name": "lbaas_listener_id",
    "value": "3baa7335-8886-4867-8481-7cbb a967a917"
  }
],
```

Dimensions

Key	Value
lbaas_instance_id	Load balancer ID
lbaas_listener_id	ID of a listener added to a load balancer
lbaas_pool_id	ID of the backend server group

7.4 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. Log in to the management console.
2. Click the username and select **My Credentials** from the drop-down list. On the **API Credentials** page, view the project ID in the project list.

8 Change History

Released On	Description
2022-09-30	This issue is the first official release.