

Elastic Load Balance

API Reference

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1 Before You Start

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

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

If you plan to access load balancers and associated resources through an API, ensure that you are familiar with ELB concepts. For details, see section "Service Overview."

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

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 section "What Is Quota?" in the *Elastic Load Balance User Guide*.
- For more constraints, see the description of each API.

Endpoints

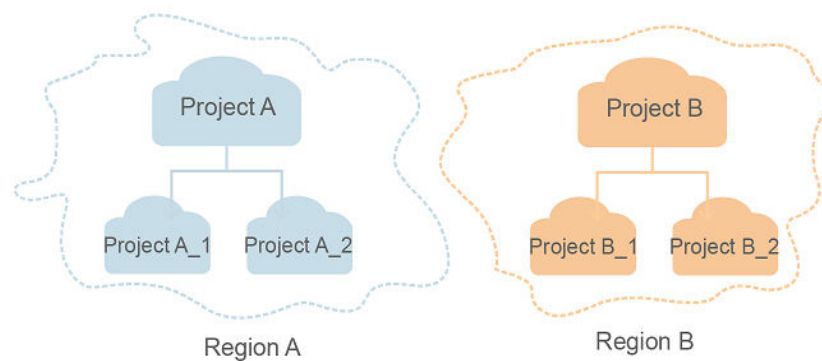
An endpoint is the **request address** for calling an API. Endpoints vary depending on services and regions. To obtain the regions and endpoints, contact the enterprise administrator.

Concepts

- Domain
A domain 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 domain 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 domain name, username, and password.
- **Region**
A region is a geographic area in which cloud resources are deployed. Availability zones (AZs) in the same region can communicate with each other over an intranet, while AZs in different regions are isolated from each other. Deploying cloud resources in different regions can better suit certain user requirements or comply with local laws or regulations.
- **AZ**
An AZ comprises of one or more physical data centers equipped with independent ventilation, fire, water, and electricity facilities. Computing, network, storage, and other resources in an AZ are logically divided into multiple clusters. AZs within a region are interconnected using high-speed optical fibers to allow you to build cross-AZ high-availability systems.
- **Project**
A project corresponds to a region. Default projects are defined to group and physically isolate resources (including computing, storage, and network resources) across regions. Users can be granted permissions in a default project to access all resources under their domains in the region associated with the project. If you need more refined access control, create subprojects under a default project and create resources in subprojects. Then you can assign users the permissions required to access only the resources in the specific subprojects.

Figure 1-1 Project isolation model



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
load balancer 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.
	Listener	Adds, updates, and deletes a listener, shows the details of a listener, and lists listeners.
	Backend server group	Adds, updates, and deletes a backend server group, shows the details of a backend server group, and lists backend server groups.
	Backend server	Adds, updates, and removes a backend server, shows the details of a backend server, and lists backend servers.
	Health check	Configures, updates, and disables a health check, and shows the details of a health check.
	Forwarding policy	Adds, updates, and deletes a forwarding policy, shows the details of a forwarding policy, and lists forwarding policies.
	Forwarding rule	Adds, updates, and deletes a forwarding rule, shows the details of a forwarding rule, and lists forwarding rules.
	Whitelist	Creates, updates, and deletes a certificate, and lists whitelists.
	SSL certificate	Creates, updates, and deletes a certificate, and lists certificates.

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

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 obtaining a user token 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 the administrator.
resource-path	Access path of an API for performing a specified operation. Obtain the path from the URI of an API. For example, the resource-path of the API used to obtain a user token is /v3/auth/tokens .
query-string	Query parameter, which is optional. Ensure that a question mark (?) is included before each query parameter that is in the format of <i>Parameter name=Parameter value</i> . For example, ?limit=10 indicates that a maximum of 10 data records will be displayed.

 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 used to obtain a user token, the request method is **POST**. The request is as follows:

```
POST https://{{endpoint}}/v3/auth/tokens
```

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	e9993fc787d94b6c886cbaa340f9c0f4
X-Auth-Token	Specifies the user token. It is a response to the API for obtaining a user token (This is the only API that does not require authentication). After the request is processed, the value of X-Subject-Token in the response header is the token value.	No This field is mandatory for token authentication.	The following is part of an example token: MIIPAgYJKoZIhvcNAQcCo...ggg1BBIINPXsidG9rZ

 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 API used to obtain a user token does not require authentication. Therefore, only the **Content-Type** field needs to be added to requests for calling the API. An example of such requests is as follows:

```
POST https://{{endpoint}}/v3/auth/tokens
Content-Type: application/json
```

(Optional) Request Body

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

The request body varies between APIs. Some APIs do not require the request body, such as the APIs requested using the GET and DELETE methods.

In the case of the API used to obtain a user token, the request parameters and parameter description can be obtained from the API request. The following provides an example request with a body included. Replace *username*, *domainname*, *\$ADMIN_PASS* (login password), and *xxxxxxxxxxxxxxxxxxxx* (project name) with the actual values. Obtain a project name from the administrator.

 NOTE

The **scope** parameter specifies where a token takes effect. You can set **scope** to an account or a project under an account. In the following example, the token takes effect only for the resources in a specified project. For more information about this API, see "Obtaining a User Token".

```
POST https://{{endpoint}}/v3/auth/tokens
Content-Type: application/json

{
  "auth": {
    "identity": {
      "methods": [
        "password"
      ],
      "password": {
        "user": {
          "name": "username",
          "password": "$ADMIN_PASS", //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"
          }
        }
      }
    },
    "scope": {
      "project": {
        "name": "xxxxxxxxxxxxxxxxxxxx"
      }
    }
  }
}
```

```
}  
}
```

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

An AK/SK is used to verify the identity of a request sender. In AK/SK authentication, a signature needs to be obtained and then added to requests.

NOTE

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.

The following uses a demo project to show how to sign a request and use an HTTP client to send an HTTPS request.

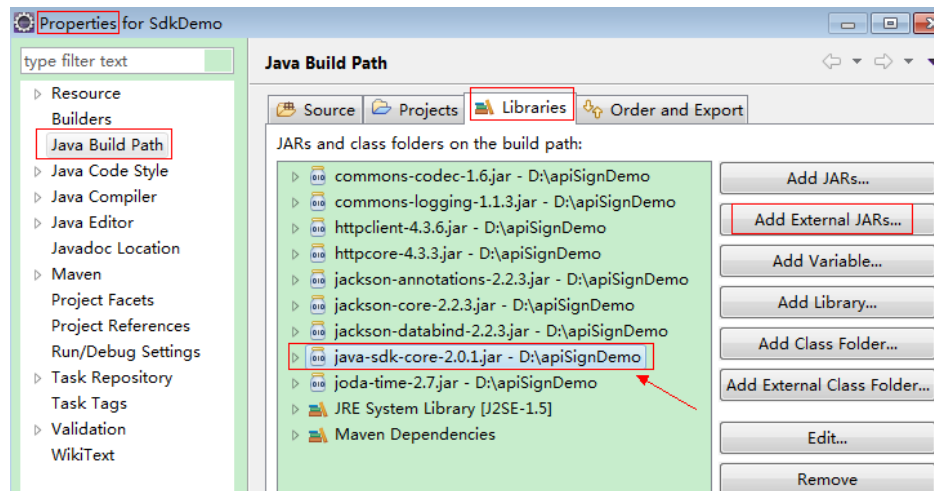
Download the demo project at <https://github.com/api-gate-way/SdkDemo>.

If you do not need the demo project, visit the following URL to download the API Gateway signing SDK:

Obtain the API Gateway signing SDK from the enterprise administrator.

Decompress the downloaded package and reference the obtained JAR files as dependencies.

Figure 3-1 Introducing the API Gateway signing SDK



Step 1 Generate an AK/SK. (If you already have an AK/SK file, skip this step and find it. Generally, the file name is **credentials.csv**.)

1. Log in to the management console.
2. Click the username and select **My Credentials** from the drop-down list.
3. In the navigation tree on the left, click **Access Keys**.
4. Click **Add Access Key**.
5. Enter an access key description and click **OK**.
6. Enter the verification code received by email, SMS message, or MFA application.

NOTE

If you have enabled operation protection (**Security Settings > Critical Operations > Operation Protection**), you need to enter the verification code.

For users created in IAM that have not bound with any email address or mobile number, only the login password needs to be entered.

7. Download the access key file.

NOTE

Keep the access key secure.

Step 2 Download and decompress the demo project.

Step 3 Import the demo project to Eclipse.

Figure 3-2 Selecting Existing Projects into Workspace

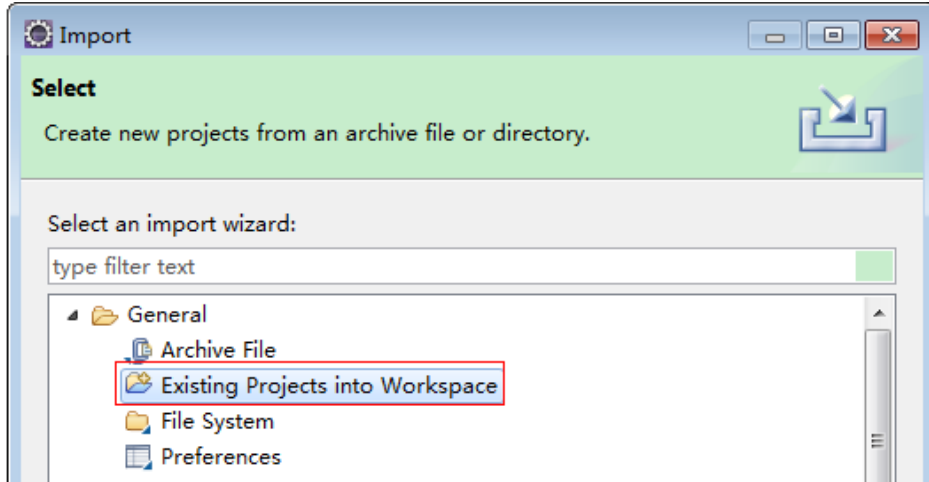


Figure 3-3 Selecting the demo project

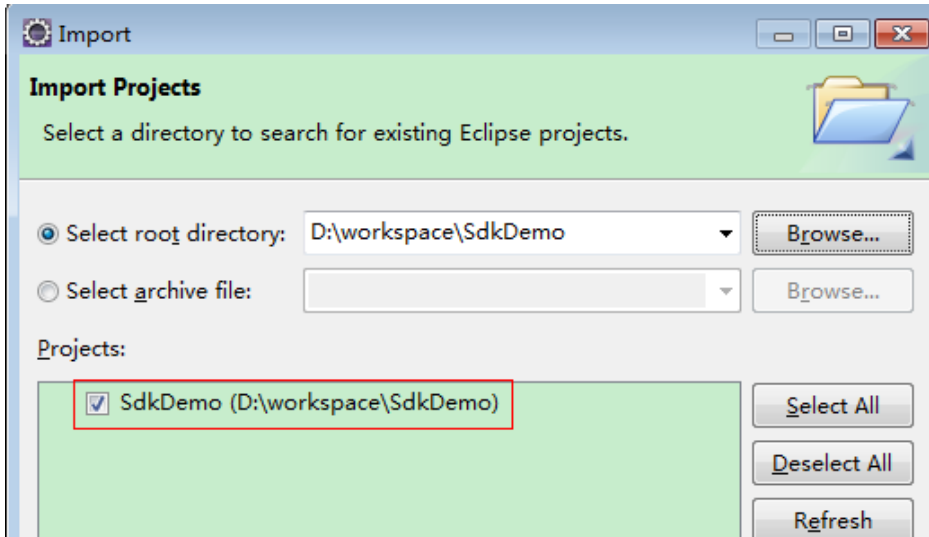
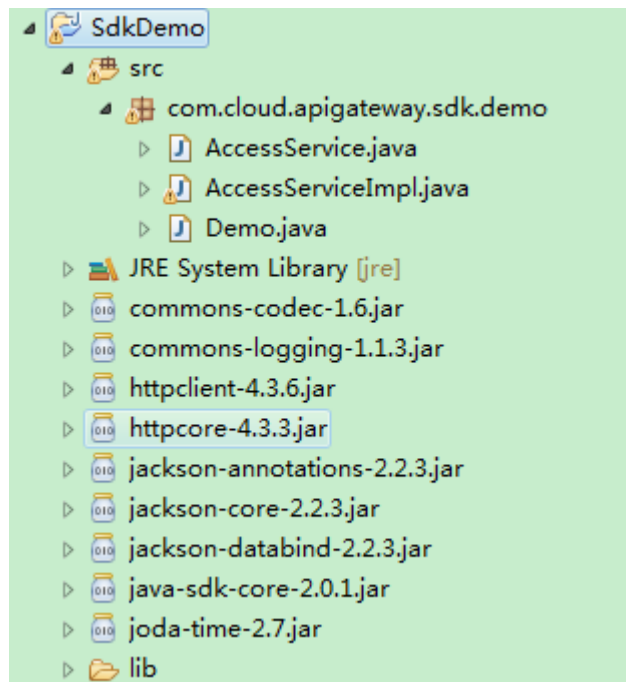


Figure 3-4 Structure of the demo project**Step 4** Sign the request.

The request signing method is integrated in the JAR files imported in [Step 3](#). The request needs to be signed before it is sent. The signature will then be added as part of the HTTP header to the request.

The demo code is classified into the following classes to demonstrate how to sign and send an HTTP request:

- **AccessService**: an abstract class that merges the GET, POST, PUT, and DELETE methods into the **access** method
- **Demo**: an execution entry used to simulate the sending of GET, POST, PUT, and DELETE requests
- **AccessServiceImpl**: **access** method implementation, which contains the code required for communication with API Gateway

1. Edit the main method in the **Demo.java** file, and replace the bold text with actual values.

If you use other methods such as POST, PUT, and DELETE, see the corresponding comment.

Specify **region**, **serviceName**, **ak/sk**, and **url** as the actual values. In this demo, the URLs for accessing VPC resources are used.

To obtain the project ID in the URLs, see [Obtaining a Project ID](#).

To obtain the endpoint, contact the enterprise administrator.

```
//TODO: Replace region with the name of the region in which the service to be accessed is located.  
private static final String region = "";  
  
//TODO: Replace vpc with the name of the service you want to access. For example, ecs, vpc, iam,  
and elb.  
private static final String serviceName = "";  
  
public static void main(String[] args) throws UnsupportedOperationException
```

```
{
//TODO: Replace the AK and SK with those obtained on the My Credentials page.
String ak = "ZIRRKMTWP*****1WKNKB";
String sk = "Us0mdMNHk*****YrRCnW0ecfzl";

//TODO: To specify a project ID (multi-project scenarios), add the X-Project-Id header.
//TODO: To access a global service, such as IAM, DNS, CDN, and TMS, add the X-Domain-Id header to
specify an account ID.
//TODO: To add a header, find "Add special headers" in the AccessServiceImpl.java file.

//TODO: Test the API
String url = "https://{Endpoint}/v1/{project_id}/vpcs";
get(ak, sk, url);

//TODO: When creating a VPC, replace {project_id} in postUrl with the actual value.
//String postUrl = "https://serviceEndpoint/v1/{project_id}/cloudservers";
//String postbody = "{\"vpc\": {\"name\": \"vpc\", \"cidr\": \"192.168.0.0/16\"}}";
//post(ak, sk, postUrl, postbody);

//TODO: When querying a VPC, replace {project_id} in url with the actual value.
//String url = "https://serviceEndpoint/v1/{project_id}/vpcs/{vpc_id}";
//get(ak, sk, url);

//TODO: When updating a VPC, replace {project_id} and {vpc_id} in putUrl with the actual values.
//String putUrl = "https://serviceEndpoint/v1/{project_id}/vpcs/{vpc_id}";
//String putbody = "{\"vpc\": {\"name\": \"vpc1\", \"cidr\": \"192.168.0.0/16\"}}";
//put(ak, sk, putUrl, putbody);

//TODO: When deleting a VPC, replace {project_id} and {vpc_id} in deleteUrl with the actual values.
//String deleteUrl = "https://serviceEndpoint/v1/{project_id}/vpcs/{vpc_id}";
//delete(ak, sk, deleteUrl);
}
```

2. Compile the code and call the API.

In the **Package Explorer** area on the left, right-click **Demo.java** and choose **Run AS > Java Application** from the shortcut menu to run the demo code.

You can view API call logs on the console.

----End

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 domain 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://{{endpoint}}/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 obtain a user token, the request is successful.

Response Header

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

[Figure 3-5](#) shows the response header fields for the API used to obtain a user token. 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 3-5 Header fields of the response to the request for obtaining a user token

```
connection → keep-alive
content-type → application/json
date → Tue, 12 Feb 2019 06:52:13 GMT
server → Web Server
strict-transport-security → max-age=31536000; includeSubdomains;
transfer-encoding → chunked
via → proxy A
x-content-type-options → nosniff
x-download-options → noopen
x-frame-options → SAMEORIGIN
x-iam-trace-id → 218d45ab-d674-4995-af3a-2d0255ba41b5
x-subject-token → [REDACTED]
x-xss-protection → 1; mode=block;
```

(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 obtain a user token.

```
{
  "token": {
    "expires_at": "2019-02-13T06:52:13.855000Z",
    "methods": [
      "password"
    ],
    "catalog": [
      {
        "endpoints": [
          {
            "region_id": "az-01",
            .....

```

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

Status code: 200

Successful request.

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

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. Note: The value is automatically generated.

Parameter	Type	Description
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.
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.

Parameter	Type	Description
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.
listeners_per_pool	Integer	Specifies the maximum number of listeners that can be associated with a backend server group. <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.

Parameter	Type	Description
ipgroup_bindings	Integer	<p>Specifies the maximum number of listeners that can be associated with an IP address group.</p> <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	<p>Specifies the maximum number of IP addresses that can be added to an IP address group.</p> <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	<p>Specifies the custom security policy quota.</p> <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_load_balancer	Integer	<p>Specifies the maximum number of listeners that can be associated with a load balancer.</p> <p>Value options:</p> <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. <p>Note: The maximum number of listeners that can be added to each load balancer is not limited, but it is recommended that the listeners not exceed the default quota.</p>

Parameter	Type	Description
ipgroups_per_listener	Integer	Specifies the maximum number of IP address groups that can be associated with a listener. Value options: <ul style="list-style-type: none">If the value is greater than or equal to 0, it indicates the IP address group quota.-1 indicates that the quota is not limited.
pools_per_l7policy	Integer	Specifies the maximum number of backend server groups that can be used by a forwarding policy. Value options: <ul style="list-style-type: none">If the value is greater than or equal to 0, it indicates the backend server group quota.-1 indicates that the quota is not limited.
l7policies_per_listener	Integer	Specifies the maximum number of forwarding policies that can be configured for a listener. Value options: <ul style="list-style-type: none">If the value is greater than or equal to 0, it indicates the forwarding policy 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 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 of strings	Specifies the resource type. The value can be loadbalancer , listener , ipgroup , pool , member , healthmonitor , l7policy , certificate , security_policy , listeners_per_loadbalancer , listeners_per_pool , members_per_pool , condition_per_policy , ipgroup_bindings , ipgroup_max_length , ipgroups_per_listener , pools_per_l7policy , or l7policies_per_listener . 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. Note: The value is automatically generated.
quotas	Array of QuotalInfo 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 , healthmonitor , l7policy , certificate , security_policy , listeners_per_loadbalancer , listeners_per_pool , members_per_pool , condition_per_policy , ipgroup_bindings , ipgroup_max_length , ipgroups_per_listener , pools_per_l7policy , or l7policies_per_listener .
quota_limit	Integer	Specifies the total quota. Value options: <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"
}, {
  "quota_key": "ipgroups_per_listener",
  "used": 5,
  "quota_limit": 10,
  "unit": "count"
}, {
  "quota_key": "pools_per_l7policy",
  "used": 5,
  "quota_limit": 100,
  "unit": "count"
}, {
  "quota_key": "l7policies_per_listener",
  "used": 5,
  "quota_limit": 100,
```

```
"unit" : "count"  
}]  
}
```

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 load balancer.

Note the following when you create a load balancer:

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

Calling Method

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

URI

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

Table 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 public border group.
loadbalancer_id	No	String	Specifies the load balancer ID.

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 .

Parameter	Type	Description
protocol	Array of strings	Specifies the type of the flavor. Value options: <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 public border 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

4.4.1 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 4-17 Path Parameters

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

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.
limit	No	Integer	Specifies the number of records on each page. Value range: 0–2000 Default value: 2000
page_reverse	No	Boolean	Specifies whether to use reverse query. Value options: <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 of strings	Specifies the load balancer ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> .
name	No	Array of strings	Specifies the load balancer name. Multiple names can be queried in the format of <i>name=xxx&name=xxx</i> .

Parameter	Mandatory	Type	Description
description	No	Array of strings	Provides supplementary information about the load balancer. Multiple descriptions can be queried in the format of <i>description=xxx&description=xx</i> .
admin_state_up	No	Boolean	Specifies whether the load balancer is enabled. Value options: <ul style="list-style-type: none"> • true: indicates the load balancer is enabled. • false: indicates the load balancer is disabled.
provisioning_status	No	Array of strings	Specifies the provisioning status of the load balancer. <ul style="list-style-type: none"> • ACTIVE: The load balancer is successfully provisioned. • PENDING_DELETE: The load balancer is being deleted. Multiple provisioning statuses can be queried in the format of <i>provisioning_status=xxx&provisioning_status=xxx</i> .
operating_status	No	Array of strings	Specifies the operating status of the load balancer. <ul style="list-style-type: none"> • ONLINE: The load balancer is working normally. • FROZEN: The load balancer has been frozen. Multiple operating statuses can be queried in the format of <i>operating_status=xxx&operating_status=xxx</i> .
guaranteed	No	Boolean	Specifies whether the load balancer is a dedicated load balancer. <ul style="list-style-type: none"> • false: The load balancer is a shared load balancer. • true: The load balancer is a dedicated load balancer.

Parameter	Mandatory	Type	Description
vpc_id	No	Array of strings	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 of strings	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 of strings	Specifies the private IPv4 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 of strings	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 of strings	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 of strings	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 of strings	Specifies the ID of the IPv6 subnet where the load balancer resides. Multiple IDs can be queried in the format of <i>ipv6_vip_virsubnet_id=xxx&ipv6_vip_virsubnet_id=xxx</i> .

Parameter	Mandatory	Type	Description
eips	No	Array of strings	<p>Specifies the IPv4 EIP bound to the load balancer. The following is an example:</p> <pre>"eips": [{ "eip_id": "e9b72a9d-4275-455e- a724-853504e4d9c6", "eip_address": "88.88.14.122", "ip_version": 4 }]</pre> <p>If you want to query the load balancers that have the above EIP bound, you can use the format of <code>eips=ip_version%3D4&eips=eip_address%3D88.88.14.122&eips=eip_id%3De9b72a9d-4275-455e-a724-853504e4d9c6</code>.</p> <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 <code>eips=eip_id=xxx&eips=eip_id=xxx</code>. • If eip_address is used as the query condition, the format is <code>eips=eip_address=xxx&eips=eip_address=xxx</code>. • If ip_version is used as the query condition, the format is <code>eips=ip_version=xxx&eips=ip_version=xxx</code>. <p>Note that this parameter has the same meaning as publicips.</p>

Parameter	Mandatory	Type	Description
publicips	No	Array of strings	<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>You can use publicips=ip_version%3D4&publicips=public_address%3D88.88.14.122&publicips=public_id%3De9b72a9d-4275-455e-a724-853504e4d9c6 to query the load balancers that have the above EIP bound.</p> <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 publicip_address 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>

Parameter	Mandatory	Type	Description
availability_zone_list	No	Array of strings	Specifies the list of AZs where the load balancer is created. Multiple AZs can be queried in the format of <i>availability_zone_list=xxx&availability_zone_list=xxx</i> .
l4_flavor_id	No	Array of strings	Specifies the ID of a flavor at Layer 4. Multiple IDs can be queried in the format of <i>l4_flavor_id=xxx&l4_flavor_id=xxx</i> . This parameter is unsupported. Please do not use it.
l4_scale_flavor_id	No	Array of strings	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.
l7_flavor_id	No	Array of strings	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> . This parameter is unsupported. Please do not use it.
l7_scale_flavor_id	No	Array of strings	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.

Parameter	Mandatory	Type	Description
member_device_id	No	Array of strings	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> .
member_address	No	Array of strings	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 of strings	<p>Specifies the ID of the enterprise project.</p> <ul style="list-style-type: none"> If enterprise_project_id is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The elb:loadbalancers:list permission must be assigned to the user group. If enterprise_project_id is specified, the value can be a specific enterprise project ID or all_granted_eps. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is all_granted_eps, resources in the enterprise projects with the elb:loadbalancers:list permission are queried. <p>Multiple values can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p>
ip_version	No	Array of integers	<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> <p>Value options:</p> <ul style="list-style-type: none"> true: Enable deletion protection. false (default): Disable deletion protection.

Parameter	Mandatory	Type	Description
elb_virsubnet_type	No	Array of strings	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 can be queried in the format of <i>elb_virsubnet_type=ipv4&elb_virsubnet_type=dualstack</i> .
autoscaling	No	Array of strings	Specifies whether to enable elastic scaling. Example: <pre>"autoscaling": { "enable": "true" }</pre> Multiple values can be queried in the format of <i>autoscaling=enable=true&autoscaling=enable=false</i> .

Request Parameters

Table 4-19 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 4-20 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.

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

Table 4-21 LoadBalancer

Parameter	Type	Description
id	String	Specifies the load balancer ID.
description	String	Provides supplementary information about the load balancer.
provisioning_status	String	Specifies the provisioning status of the load balancer. Value options: <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 whether the load balancer is enabled. Value options: <ul style="list-style-type: none"> ● true: indicates the load balancer is enabled. ● 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. Value options: <ul style="list-style-type: none"> ● ONLINE: indicates that the load balancer is running normally. ● FROZEN: indicates that the load balancer is frozen.
name	String	Specifies the load balancer name.

Parameter	Type	Description
project_id	String	Specifies the project ID of the load balancer.
vip_subnet_cidr_id	String	Specifies the ID of the frontend 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. Value options: <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_virsubnet_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.

Parameter	Type	Description
enterprise_project_id	String	<p>Specifies the enterprise project ID.</p> <p>If this parameter is not passed during resource creation, "0" will be returned, and the resource belongs to the default enterprise project.</p> <p>Note: "0" is not a valid enterprise project ID and cannot be used in the APIs for creating, updating the load balancer, or querying the details of the load balancer.</p>
billing_info	String	<p>Provides resource billing information.</p> <ul style="list-style-type: none">If the value is left blank, the resource is billed in pay-per-use mode. <p>This parameter is unsupported. Please do not use it.</p>
l4_flavor_id	String	<p>Specifies the ID of a flavor at Layer 4.</p> <p>l4_flavor_id defines the maximum elastic flavor at Layer 4.</p> <p>Note:</p> <ul style="list-style-type: none">If l4_flavor_id is specified, the load balancer is billed by fixed specifications.If L4_elastic_max is specified, the load balancer is billed by how many LCUs you use. <p>All load balancers share bandwidth resources. This parameter is unsupported. Please do not use it.</p>
l4_scale_flavor_id	String	<p>Specifies the ID of the reserved flavor at Layer 4.</p> <p>This parameter is unsupported. Please do not use it.</p>

Parameter	Type	Description
<code>l7_flavor_id</code>	String	<p>Specifies the ID of a flavor at Layer 7.</p> <p>l7_flavor_id defines the maximum elastic flavor at Layer 7.</p> <p>Note:</p> <ul style="list-style-type: none">• If l7_flavor_id is specified, the load balancer is billed by fixed specifications.• If L7_elastic_max is specified, the load balancer is billed by how many LCUs you use. <p>All load balancers share bandwidth resources. This parameter is unsupported. Please do not use it.</p>
<code>l7_scale_flavor_id</code>	String	<p>Specifies the ID of the reserved flavor at Layer 7.</p> <p>This parameter is unsupported. Please do not use it.</p>
<code>publicips</code>	Array of PublicIpInfo objects	<p>Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer.</p> <p>This parameter has the same meaning as eips.</p>
<code>global_eips</code>	Array of GlobalEipInfo objects	<p>Specifies the global EIP bound to the load balancer.</p> <p>Only the first global EIP specified under global_eips will be bound.</p> <p>This parameter is unsupported. Please do not use it.</p>
<code>elb_virsubnet_ids</code>	Array of strings	<p>Lists the IDs of subnets on the downstream plane.</p>
<code>elb_virsubnet_type</code>	String	<p>Specifies the type of the subnet on the downstream plane.</p> <p>Value options:</p> <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 add backend servers that are not in the load balancer's VPC.</p> <p>Value options:</p> <ul style="list-style-type: none">• true: Enable IP as a Backend.• false: Disable IP as a Backend. <p>Note:</p> <ul style="list-style-type: none">• The value can only be updated to true.• If you need to connect your server to a shared VPC, ensure the VPC principal has created a VPC peering connections between the two VPCs.• This function is supported only by dedicated load balancers.
frozen_scene	String	<p>Specifies the scenario where the load balancer is frozen.</p>
ipv6_bandwidth	BandwidthRef object	<p>Specifies the ID of the bandwidth used by an IPv6 address.</p> <p>Note: 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 to enable deletion protection.</p> <p>Value options:</p> <ul style="list-style-type: none">• true: Enable deletion protection.• false: Disable deletion protection. <p>Note:</p> <ul style="list-style-type: none">• Disable deletion protection for all your resources before deleting your account.• This parameter is returned only when deletion protection is enabled at the site.

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 ID of the maximum elastic flavor at Layer 4. l7_flavor_id indicates the ID of the maximum elastic flavor at Layer 7. <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.
waf_failure_action	String	<p>Specifies traffic distributing policies when the WAF is faulty.</p> <p>Value options:</p> <ul style="list-style-type: none"> discard: Traffic will not be distributed. forward (default): 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>

Table 4-22 PoolRef

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

Table 4-23 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-24 Tag

Parameter	Type	Description
key	String	Specifies the tag key.
value	String	Specifies the tag value.

Table 4-25 EipInfo

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

Table 4-26 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 4-27 GlobalEipInfo

Parameter	Type	Description
global_eip_id	String	Specifies the ID of the global EIP.
global_eip_addresses	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 4-28 BandwidthRef

Parameter	Type	Description
id	String	Specifies the shared bandwidth ID.

Table 4-29 AutoscalingRef

Parameter	Type	Description
enable	Boolean	Specifies whether to enable elastic scaling for the load balancer. Value options: <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 elastic flavor at Layer 7. Note: <ul style="list-style-type: none">• This parameter cannot be left blank if there are HTTP or HTTPS listeners.• This parameter has been deprecated, but is retained for compatibility purposes. Using this parameter is not recommended. If this parameter is specified, the load balancer with minimum specifications will be created and you will be billed for the minimum specifications.

Table 4-30 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result. When page_reverse is set to true , this parameter is used together to query resources on the previous page.
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_virusubnet_id": "0b9e3c5e-3ec8-46b3-bab9-80b1450e59ee",
    "ipv6_vip_port_id": "5186bb47-24e5-4171-b795-62d22846db9b",
    "publicips": [ ],
    "elb_virusubnet_ids": [ "0b9e3c5e-3ec8-46b3-bab9-80b1450e59ee" ],
    "elb_virusubnet_type": "dualstack",
    "ip_target_enable": false,
    "autoscaling": {
      "enable": false,
      "min_l7_flavor_id": ""
    },
    "frozen_scene": null,
    "eips": [ ],
    "guaranteed": true,
    "billing_info": null,
    "l4_flavor_id": "aa06b26b-9ff9-43c6-92b9-41e0f746bca6",
    "l4_scale_flavor_id": null,
    "l7_flavor_id": "e2a5675c-a181-444e-b9a5-17b052dc7fb9",
    "l7_scale_flavor_id": null,
    "vip_subnet_cidr_id": "96e52038-7983-462f-8a96-415d8a280b13",
    "public_border_group": "center",
    "log_topic_id": null,
    "log_group_id": null
  }, {
    "id": "cce5318e-c79a-4f68-94a2-9fb285c6efbe",
    "project_id": "057ef081eb00d2732fd1c01a9be75e6f",
    "name": "elb-reset",
  }
]
```



```

"description" : "",
"vip_port_id" : null,
"vip_address" : null,
"admin_state_up" : true,
"provisioning_status" : "ACTIVE",
"operating_status" : "ONLINE",
"listeners" : [ {
  "id" : "0ae21c37-8b90-4e73-8a35-eedde6d2538c"
} ],
"pools" : [ {
  "id" : "904ecca6-8ebb-4974-9c5c-61d1d66fba17"
} ],
"tags" : [ ],
"provider" : "vlb",
"created_at" : "2021-07-26T02:46:31Z",
"updated_at" : "2021-07-26T02:46:59Z",
"vpc_id" : "59cb11ef-f185-49ba-92af-0539e8ff9734",
"enterprise_project_id" : "0",
"availability_zone_list" : [ "az1" ],
"ipv6_vip_address" : null,
"ipv6_vip_virusubnet_id" : null,
"ipv6_vip_port_id" : null,
"publicips" : [ {
  "publicip_id" : "0c07e04d-e2f9-41ad-b934-f58a65b6734d",
  "publicip_address" : "97.97.2.171",
  "ip_version" : 4
} ],
"elb_virusubnet_ids" : [ "7f817f9c-8731-4002-9e47-18cb8d431787" ],
"elb_virusubnet_type" : "dualstack",
"ip_target_enable" : false,
"autoscaling" : {
  "enable" : false,
  "min_l7_flavor_id" : ""
},
"frozen_scene" : null,
"eips" : [ {
  "eip_id" : "0c07e04d-e2f9-41ad-b934-f58a65b6734d",
  "eip_address" : "97.97.2.171",
  "ip_version" : 4
} ],
"guaranteed" : true,
"billing_info" : null,
"l4_flavor_id" : "636ba721-935a-4ca5-a685-8076ce0e4148",
"l4_scale_flavor_id" : null,
"l7_flavor_id" : null,
"l7_scale_flavor_id" : null,
"vip_subnet_cidr_id" : null,
"public_border_group" : "center",
"log_topic_id" : null,
"log_group_id" : null
} ],
"page_info" : {
  "next_marker" : "cce5318e-c79a-4f68-94a2-9fb285c6efbe",
  "previous_marker" : "65672f7e-2024-4c39-9198-98249da479c5",
  "current_count" : 2
}
}

```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.4.2 Viewing the Details of a Load Balancer

Function

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

Calling Method

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

URI

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

Table 4-31 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 4-32 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 4-33 Response body parameters

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

Parameter	Type	Description
loadbalancer	LoadBalancer object	Specifies the load balancer.

Table 4-34 LoadBalancer

Parameter	Type	Description
id	String	Specifies the load balancer ID.
description	String	Provides supplementary information about the load balancer.
provisioning_status	String	Specifies the provisioning status of the load balancer. Value options: <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 whether the load balancer is enabled. Value options: <ul style="list-style-type: none">• true: indicates the load balancer is enabled.• 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. Value options: <ul style="list-style-type: none">• ONLINE: indicates that the load balancer is running normally.• FROZEN: indicates that the load balancer is frozen.
name	String	Specifies the load balancer name.

Parameter	Type	Description
project_id	String	Specifies the project ID of the load balancer.
vip_subnet_cidr_id	String	Specifies the ID of the frontend 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. Value options: <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_virsubnet_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.

Parameter	Type	Description
enterprise_project_id	String	<p>Specifies the enterprise project ID.</p> <p>If this parameter is not passed during resource creation, "0" will be returned, and the resource belongs to the default enterprise project.</p> <p>Note: "0" is not a valid enterprise project ID and cannot be used in the APIs for creating, updating the load balancer, or querying the details of the load balancer.</p>
billing_info	String	<p>Provides resource billing information.</p> <ul style="list-style-type: none">If the value is left blank, the resource is billed in pay-per-use mode. <p>This parameter is unsupported. Please do not use it.</p>
l4_flavor_id	String	<p>Specifies the ID of a flavor at Layer 4.</p> <p>l4_flavor_id defines the maximum elastic flavor at Layer 4.</p> <p>Note:</p> <ul style="list-style-type: none">If l4_flavor_id is specified, the load balancer is billed by fixed specifications.If L4_elastic_max is specified, the load balancer is billed by how many LCUs you use. <p>All load balancers share bandwidth resources. This parameter is unsupported. Please do not use it.</p>
l4_scale_flavor_id	String	<p>Specifies the ID of the reserved flavor at Layer 4.</p> <p>This parameter is unsupported. Please do not use it.</p>

Parameter	Type	Description
<code>l7_flavor_id</code>	String	<p>Specifies the ID of a flavor at Layer 7.</p> <p>l7_flavor_id defines the maximum elastic flavor at Layer 7.</p> <p>Note:</p> <ul style="list-style-type: none">• If l7_flavor_id is specified, the load balancer is billed by fixed specifications.• If L7_elastic_max is specified, the load balancer is billed by how many LCUs you use. <p>All load balancers share bandwidth resources. This parameter is unsupported. Please do not use it.</p>
<code>l7_scale_flavor_id</code>	String	<p>Specifies the ID of the reserved flavor at Layer 7.</p> <p>This parameter is unsupported. Please do not use it.</p>
<code>publicips</code>	Array of PublicIpInfo objects	<p>Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer.</p> <p>This parameter has the same meaning as eips.</p>
<code>global_eips</code>	Array of GlobalEipInfo objects	<p>Specifies the global EIP bound to the load balancer.</p> <p>Only the first global EIP specified under global_eips will be bound.</p> <p>This parameter is unsupported. Please do not use it.</p>
<code>elb_virsubnet_ids</code>	Array of strings	<p>Lists the IDs of subnets on the downstream plane.</p>
<code>elb_virsubnet_type</code>	String	<p>Specifies the type of the subnet on the downstream plane.</p> <p>Value options:</p> <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 add backend servers that are not in the load balancer's VPC.</p> <p>Value options:</p> <ul style="list-style-type: none">● true: Enable IP as a Backend.● false: Disable IP as a Backend. <p>Note:</p> <ul style="list-style-type: none">● The value can only be updated to true.● If you need to connect your server to a shared VPC, ensure the VPC principal has created a VPC peering connections between the two VPCs.● This function is supported only by dedicated load balancers.
frozen_scene	String	<p>Specifies the scenario where the load balancer is frozen.</p>
ipv6_bandwidth	BandwidthRef object	<p>Specifies the ID of the bandwidth used by an IPv6 address.</p> <p>Note: 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 to enable deletion protection.</p> <p>Value options:</p> <ul style="list-style-type: none">● true: Enable deletion protection.● false: Disable deletion protection. <p>Note:</p> <ul style="list-style-type: none">● Disable deletion protection for all your resources before deleting your account.● This parameter is returned only when deletion protection is enabled at the site.

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 ID of the maximum elastic flavor at Layer 4. l7_flavor_id indicates the ID of the maximum elastic flavor at Layer 7. <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.
waf_failure_action	String	<p>Specifies traffic distributing policies when the WAF is faulty.</p> <p>Value options:</p> <ul style="list-style-type: none"> discard: Traffic will not be distributed. forward (default): 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>

Table 4-35 PoolRef

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

Table 4-36 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-37 Tag

Parameter	Type	Description
key	String	Specifies the tag key.
value	String	Specifies the tag value.

Table 4-38 EipInfo

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

Table 4-39 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 4-40 GlobalEipInfo

Parameter	Type	Description
global_eip_id	String	Specifies the ID of the global EIP.
global_eip_addresses	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 4-41 BandwidthRef

Parameter	Type	Description
id	String	Specifies the shared bandwidth ID.

Table 4-42 AutoscalingRef

Parameter	Type	Description
enable	Boolean	Specifies whether to enable elastic scaling for the load balancer. Value options: <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 elastic flavor at Layer 7. Note: <ul style="list-style-type: none">• This parameter cannot be left blank if there are HTTP or HTTPS listeners.• This parameter has been deprecated, but is retained for compatibility purposes. Using this parameter is not recommended. If this parameter is specified, the load balancer with minimum specifications will be created and you will be billed for the minimum specifications.

Example Requests

Querying the details of a given load balancer

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

Example Responses

Status code: 200

Successful request.

```
{  
  "loadbalancer" : {  
    "id" : "3dbde7e5-c277-4ea3-a424-edd339357eff",  
    "project_id" : "060576782980d5762f9ec014dd2f1148",  
    "name" : "elb-l4-no-delete",  
    "description" : null,  
  }  
}
```

```
"vip_port_id" : "f079c7ee-65a9-44ef-be86-53d8927e59be",
"vip_address" : "10.0.0.196",
"admin_state_up" : true,
"provisioning_status" : "ACTIVE",
"operating_status" : "ONLINE",
"listeners" : [ ],
"pools" : [ {
  "id" : "1d864dc9-f6ef-4366-b59d-7034cde2328f"
}, {
  "id" : "c0a2e4a1-c028-4a24-a62f-e721c52f5513"
}, {
  "id" : "79308896-6169-4c28-acbc-e139eb661996"
} ],
"tags" : [ ],
"provider" : null,
"created_at" : "2019-12-02T09:55:11Z",
"updated_at" : "2019-12-02T09:55:11Z",
"vpc_id" : "70711260-9de9-4d96-9839-0ae698e00109",
"enterprise_project_id" : "0",
"availability_zone_list" : [ ],
"ipv6_vip_address" : null,
"ipv6_vip_virusubnet_id" : null,
"ipv6_vip_port_id" : null,
"publicips" : [ ],
"elb_virusubnet_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](#).

4.4.3 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 4-43 Path Parameters

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

Request Parameters

Table 4-44 Request header parameters

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

Table 4-45 Request body parameters

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

Table 4-46 UpdateLoadBalancerOption

Parameter	Mandatory	Type	Description
name	No	String	Specifies the load balancer name.

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies whether the load balancer is enabled. Value options: <ul style="list-style-type: none">• true: indicates the load balancer is enabled.• false: indicates the load balancer is disabled.
description	No	String	Provides supplementary information about the load balancer.
ipv6_vip_virsubnet_id	No	String	Specifies the ID of the IPv6 subnet where the load balancer resides. You can query parameter neutron_network_id in the response by calling the API (GET https:// {VPC_Endpoint}/v1/ {project_id}/subnets). Note: <ul style="list-style-type: none">• The IPv6 subnet can be updated using ipv6_vip_virsubnet_id, and the private IPv6 address of the load balancer will be changed accordingly.• 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
vip_subnet_cidr_id	No	String	<p>Specifies the ID of the IPv4 subnet where the load balancer resides.</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"> • The IPv4 subnet can be updated using vip_subnet_cidr_id, and the private IPv4 address of the load balancer will be changed accordingly. • 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.

Parameter	Mandatory	Type	Description
vip_address	No	String	<p>Specifies the private IPv4 address bound to the load balancer.</p> <p>Note:</p> <ul style="list-style-type: none"> 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.
l4_flavor_id	No	String	<p>Specifies the ID of a flavor at Layer 4.</p> <p>Note:</p> <p>All load balancers share bandwidth resources. This parameter is unsupported. Please do not use it.</p>
l7_flavor_id	No	String	<p>Specifies the ID of a flavor at Layer 7.</p> <p>Note:</p> <p>All load balancers share bandwidth resources. This parameter is unsupported. Please do not use it.</p>
ipv6_bandwidth	No	BandwidthRef object	<p>Specifies the ID of the bandwidth used by an IPv6 address.</p> <p>Note: 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>

Parameter	Mandatory	Type	Description
ip_target_enable	No	Boolean	<p>Specifies whether to add backend servers that are not in the load balancer's VPC.</p> <p>Value options:</p> <ul style="list-style-type: none">• true: Enable IP as a Backend.• false: Disable IP as a Backend. <p>Note:</p> <ul style="list-style-type: none">• The value can only be updated to true.• If you need to connect your server to a shared VPC, ensure the VPC principal has created a VPC peering connections between the two VPCs.• This function is supported only by dedicated load balancers.

Parameter	Mandatory	Type	Description
elb_virsubnet_ids	No	Array of strings	<p>Specifies the IDs of subnets on the downstream plane.</p> <p>You can query parameter neutron_network_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"> • 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 unbind the subnets that have been used by the load balancer. Otherwise, an error will be returned. • All subnets belong to the same VPC where the load balancer resides. • Edge subnets are not supported.

Parameter	Mandatory	Type	Description
deletion_protection_enable	No	Boolean	<p>Specifies whether to enable deletion protection.</p> <p>Value options:</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>
autoscaling	No	UpdateLoadBalancerAutoscalingOption 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 ID of the maximum elastic flavor at Layer 4. l7_flavor_id indicates the ID of the maximum elastic flavor at Layer 7. <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 4-47 BandwidthRef

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

Table 4-48 UpdateLoadbalancerAutoscalingOption

Parameter	Mandatory	Type	Description
enable	Yes	Boolean	Specifies whether to enable elastic scaling the load balancer. Value options: <ul style="list-style-type: none">• true: Enable elastic scaling.• false: Disable elastic scaling.
min_l7_flavor_id	No	String	Specifies the ID of the minimum elastic flavor at Layer 7. Note: <ul style="list-style-type: none">• This parameter cannot be left blank if there are Layer 7 listeners.• This parameter has been deprecated, but is retained for compatibility purposes. Using this parameter is not recommended. If this parameter is specified, the load balancer with minimum specifications will be created and you will be billed for the minimum specifications.

Response Parameters

Status code: 200

Table 4-49 Response body parameters

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

Table 4-50 LoadBalancer

Parameter	Type	Description
id	String	Specifies the load balancer ID.
description	String	Provides supplementary information about the load balancer.
provisioning_status	String	Specifies the provisioning status of the load balancer. Value options: <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 whether the load balancer is enabled. Value options: <ul style="list-style-type: none">• true: indicates the load balancer is enabled.• 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. Value options: <ul style="list-style-type: none">• ONLINE: indicates that the load balancer is running normally.• FROZEN: indicates that the load balancer is frozen.
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 frontend IPv4 subnet where the load balancer resides.
vip_address	String	Specifies the private IPv4 address bound to the load balancer.

Parameter	Type	Description
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. Value options: <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_virsubnet_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.

Parameter	Type	Description
enterprise_project_id	String	<p>Specifies the enterprise project ID.</p> <p>If this parameter is not passed during resource creation, "0" will be returned, and the resource belongs to the default enterprise project.</p> <p>Note: "0" is not a valid enterprise project ID and cannot be used in the APIs for creating, updating the load balancer, or querying the details of the load balancer.</p>
billing_info	String	<p>Provides resource billing information.</p> <ul style="list-style-type: none"> If the value is left blank, the resource is billed in pay-per-use mode. <p>This parameter is unsupported. Please do not use it.</p>
l4_flavor_id	String	<p>Specifies the ID of a flavor at Layer 4.</p> <p>l4_flavor_id defines the maximum elastic flavor at Layer 4.</p> <p>Note:</p> <ul style="list-style-type: none"> If l4_flavor_id is specified, the load balancer is billed by fixed specifications. If L4_elastic_max is specified, the load balancer is billed by how many LCUs you use. <p>All load balancers share bandwidth resources. This parameter is unsupported. Please do not use it.</p>
l4_scale_flavor_id	String	<p>Specifies the ID of the reserved flavor at Layer 4.</p> <p>This parameter is unsupported. Please do not use it.</p>

Parameter	Type	Description
l7_flavor_id	String	<p>Specifies the ID of a flavor at Layer 7. l7_flavor_id defines the maximum elastic flavor at Layer 7.</p> <p>Note:</p> <ul style="list-style-type: none"> • If l7_flavor_id is specified, the load balancer is billed by fixed specifications. • If L7_elastic_max is specified, the load balancer is billed by how many LCUs you use. <p>All load balancers share bandwidth resources. This parameter is unsupported. Please do not use it.</p>
l7_scale_flavor_id	String	<p>Specifies the ID of the reserved flavor at Layer 7.</p> <p>This parameter is unsupported. Please do not use it.</p>
publicips	Array of PublicIpInfo objects	<p>Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer.</p> <p>This parameter has the same meaning as eips.</p>
global_eips	Array of GlobalEipInfo objects	<p>Specifies the global EIP bound to the load balancer.</p> <p>Only the first global EIP specified under global_eips will be bound.</p> <p>This parameter is unsupported. Please do not use it.</p>
elb_virsubnet_ids	Array of strings	<p>Lists the IDs of subnets on the downstream plane.</p>
elb_virsubnet_type	String	<p>Specifies the type of the subnet on the downstream plane.</p> <p>Value options:</p> <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 add backend servers that are not in the load balancer's VPC.</p> <p>Value options:</p> <ul style="list-style-type: none"> ● true: Enable IP as a Backend. ● false: Disable IP as a Backend. <p>Note:</p> <ul style="list-style-type: none"> ● The value can only be updated to true. ● If you need to connect your server to a shared VPC, ensure the VPC principal has created a VPC peering connections between the two VPCs. ● This function is supported only by dedicated load balancers.
frozen_scene	String	<p>Specifies the scenario where the load balancer is frozen.</p>
ipv6_bandwidth	BandwidthRef object	<p>Specifies the ID of the bandwidth used by an IPv6 address.</p> <p>Note: 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 to enable deletion protection.</p> <p>Value options:</p> <ul style="list-style-type: none"> ● true: Enable deletion protection. ● false: Disable deletion protection. <p>Note:</p> <ul style="list-style-type: none"> ● Disable deletion protection for all your resources before deleting your account. ● This parameter is returned only when deletion protection is enabled at the site.

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 ID of the maximum elastic flavor at Layer 4. l7_flavor_id indicates the ID of the maximum elastic flavor at Layer 7. <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.
waf_failure_action	String	<p>Specifies traffic distributing policies when the WAF is faulty.</p> <p>Value options:</p> <ul style="list-style-type: none"> discard: Traffic will not be distributed. forward (default): 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>

Table 4-51 PoolRef

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

Table 4-52 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-53 Tag

Parameter	Type	Description
key	String	Specifies the tag key.
value	String	Specifies the tag value.

Table 4-54 EipInfo

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

Table 4-55 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 4-56 GlobalEipInfo

Parameter	Type	Description
global_eip_id	String	Specifies the ID of the global EIP.
global_eip_addresses	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 4-57 BandwidthRef

Parameter	Type	Description
id	String	Specifies the shared bandwidth ID.

Table 4-58 AutoscalingRef

Parameter	Type	Description
enable	Boolean	Specifies whether to enable elastic scaling for the load balancer. Value options: <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 elastic flavor at Layer 7. Note: <ul style="list-style-type: none">• This parameter cannot be left blank if there are HTTP or HTTPS listeners.• This parameter has been deprecated, but is retained for compatibility purposes. Using this parameter is not recommended. If this parameter is specified, the load balancer with minimum specifications will be created and you will be billed for the minimum specifications.

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](#).

4.4.4 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 4-59 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 4-60 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](#).

4.4.5 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 4-61 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 4-62 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 4-63 Response body parameters

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

Table 4-64 LoadBalancerStatusResult

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

Table 4-65 LoadBalancerStatus

Parameter	Type	Description
name	String	Specifies the load balancer name.
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 4-66 LoadBalancerStatusListener

Parameter	Type	Description
name	String	Specifies the name of the listener added to the load balancer.
provisioning_status	String	Specifies the provisioning status of the listener. The value can only be ACTIVE , indicating that the listener is successfully provisioned.
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	<p>Specifies the operating status of the listener.</p> <p>The value can only be one of the following:</p> <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. <p>Note: DEGRADED and DISABLED are returned only when the API for querying the load balancer status tree is called.</p>

Table 4-67 LoadBalancerStatusPolicy

Parameter	Type	Description
action	String	<p>Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener.</p> <p>Value options:</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.
id	String	Specifies the forwarding policy ID.

Parameter	Type	Description
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.
name	String	Specifies the policy name.
rules	Array of LoadBalancerStatusL7Rule objects	Specifies the forwarding rule.

Table 4-68 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 4-69 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.
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. Value options: <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 4-70 LoadBalancerStatusHealthMonitor

Parameter	Type	Description
type	String	Specifies the health check protocol. The value can be TCP , UDP_CONNECT , or HTTP .

Parameter	Type	Description
id	String	Specifies the health check ID.
name	String	Specifies the health check name.
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 4-71 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. Value options: <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-jy",
      "provisioning_status": "ACTIVE",
      "listeners": [ {
        "name": "listener-jy-1",
        "provisioning_status": "ACTIVE",
        "pools": [ {
          "name": "pool-jy-1",
          "provisioning_status": "ACTIVE",
          "healthmonitor": {
            "type": "TCP",
            "id": "7422b51a-0ed2-4702-9429-4f88349276c6",
            "name": "",
            "provisioning_status": "ACTIVE"
          },
          "members": [ {
            "protocol_port": 80,
            "address": "192.168.44.11",
            "id": "7bbf7151-0dce-4087-b316-06c7fa17b894",
            "operating_status": "ONLINE",
            "provisioning_status": "ACTIVE"
          } ],
          "id": "c54b3286-2349-4c5c-ade1-e6bb0b26ad18",
          "operating_status": "ONLINE"
        } ],
        "l7policies": [ ],
        "id": "eb84c5b4-9bc5-4bee-939d-3900fb05dc7b",
        "operating_status": "ONLINE"
      } ],
      "pools": [ {
        "name": "pool-jy-1",
        "provisioning_status": "ACTIVE",
        "healthmonitor": {
          "type": "TCP",
          "id": "7422b51a-0ed2-4702-9429-4f88349276c6",
          "name": "",
          "provisioning_status": "ACTIVE"
        },
        "members": [ {
          "protocol_port": 80,
          "address": "192.168.44.11",
          "id": "7bbf7151-0dce-4087-b316-06c7fa17b894",
          "operating_status": "ONLINE",
          "provisioning_status": "ACTIVE"
        } ],
        "id": "c54b3286-2349-4c5c-ade1-e6bb0b26ad18",
        "operating_status": "ONLINE"
      } ],
      "id": "38278031-cfca-44be-81be-a412f618773b",
      "operating_status": "ONLINE"
    }
  }
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.5 Certificate

4.5.1 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 4-72 Path Parameters

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

Request Parameters

Table 4-73 Request header parameters

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

Table 4-74 Request body parameters

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

Table 4-75 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.

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> <p>Note the following when specifying a domain name:</p> <ul style="list-style-type: none">• The value can contain 0 to 10,000 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 100 domain names are allowed.• 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 that starts with *. Example: *.test.com
name	No	String	Specifies the certificate name.
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.
project_id	No	String	<ul style="list-style-type: none">• This parameter is valid and mandatory only when type is set to server.

Parameter	Mandatory	Type	Description
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 4-76 Response body parameters

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

Table 4-77 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.

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> <p>Note the following when specifying a domain name:</p> <ul style="list-style-type: none">• The value can contain 0 to 10,000 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 100 domain names are allowed.• 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 that starts with *. Example: *.test.com
id	String	Specifies the certificate ID.
name	String	Specifies the certificate name.
private_key	String	<p>Specifies the private key of the certificate used by HTTPS listeners. The value must be PEM encoded characters.</p> <ul style="list-style-type: none">• This parameter will be ignored even if type is set to client. The certificate can still be created and used normally.• This parameter is valid and mandatory only when type is set to server.
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.

Parameter	Type	Description
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.

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-----
\nMIIEvglBADANBgqhkiG9w0BAQEFAASCBAgEAAoIBAQQDQVAbOLe5xNf4M
\n253Wn9vhdUzozetjv4J+B7kYwsMhRcgdcJ8KcN1nfzTvl2ksXITQ2o9BkpStnPe\ntB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nMD30glh6QoP3cq7PGWcuZKv7hjd1tjCTQukwMvqV8lcq39buNpIgdOWzEP5AqzXt
\nCOFYn6RTH5SRug4hKNN7sT1eYMslHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Ch\nZAPYUBkl/
0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slw\CLRU08k\nEo04Z9H/
AgMBAAEcggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/HI
\nfvCArftGgMaYWPSNCRJMXB7tPwpQu19esjz4Z/cR2Je4tLPrffGUsHFGzjv5OQB
\nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8ISETq8YaXngBO6vES9LMhHkNKKr\nciu9YklnNEHu6uRJ5g/
eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9l9M\nEGpFYI6AdHlwfZcT/
RNAxhP82lg2gUJSgAu66FFDjMwQXKbafKdP3zq4Up8a7Ale\nkrgruPtFV1vWklg
+bUfHgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\nXUqgCZ0BMKeV2jf2drxRRwRl33SksQbzAQ/qrLd7GP3sCGqvkxWY2FPdFYf8kx
\nGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjP7dt
\nJ7n8EzkRUNE6aIMHOFEEych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\niWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
\nIS6VjoTkF6r7VZoLXX0fbuXh6lM8K8lQRfBpjff56p9phMwaBpDNDrfpHB5utBU\nxs40yldp6wKBgQC69Cp/
xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB\n11VQhELG19CbKsZdKM71GyElmix/
T7FnJSHIWho1qVo6AQyduNwNAQD15pr8KAd\nXGXAZZ1FQcb3KYa
+2fflERmazdOTWjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak\n/735uP20KqkNehZpC2dJei7OitgRhCs/
dKASUXHSW4fptBnUxACYodDxtY4Vha\nnfl7FPMdvGl8ioYbvlHFh
+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLA0GBAJkD4wHW54Pwd4Ctfk9o
\njHjWb7pQLUyPtZO9dm+4fpcMn9Okf43AE2yAOaAP94GdzdDJkxfciXKcsYr9lIuk
\nfaoXgJKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXZuEd\n3fy
+1rCUwzOp9LSjtYf4ege\n-----END PRIVATE KEY-----",
    "certificate": "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgICEREdQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMmTXID
\nb21wYW55IENBMB4XDTE4MDcwMjEzOTUwN1oXDTQ1MTEyNzEzMTUwN1owFDESMBAG
\nA1UEAwwJbG9jYXZlbnR5b3NOMIIBIjANBgqhkiG9w0BAQEFAAOCAQ8AMIIBCGKAQEA\n\nofQGzi3ucTX
+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUXIHxCfGp19Z3807yNpLF5\nU0NqPQZKUzZ3rQeLN9mYiUJZPutYIFDDB8CtL
gV+eyU9yYjSlWx/Bm5kWNPh9\n7B9Yu9pbb2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/
W7jaS\nlAzlsxD+QM6l7Qjhwj+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylYKy4zgnv1tn/K
\ny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPLZUUUn7yw3nkOOtLMI28lEv0WY
\nYd7CMJQk51NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY292\n\nnhwQKuUvJhwR/
AAABMBMGA1UdJQQMMAoGCCSGAQUFBwMBMA0GCsGSIb3DQEBCwUA
\nA4IBAQA8lMQxaTey7EjXtRLSVIEAMftAQPg6jijNQuvIBQYUDauDT4W2XUZ5wAn
\nnjiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKIOdl9i5I98TGKI6OoDa
\nnezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRLYlzp1HMnI6hkjPk4PCZ
\nnwKnhadlScati9CCt3UzXSNJOSLalKdHERH08lq+1BchScxCfk0xNITn1HZZGml\n"
```

```
+vbmunok3A2luc14rnsrbcKGYqXGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ\niYsGDVN+9QBd0eYUHce  
+77s96i3l\n-----END CERTIFICATE-----"  
}  
}
```

Example Responses

Status code: 201

Normal response to POST requests.

```
{  
  "certificate" : {  
    "private_key" : "-----BEGIN PRIVATE KEY-----  
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBCgwwgSkAgEAAoIBAQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J  
+B7kYwsMhRcgdcJ8KCnX1nfzTvl2ksXITQ2o9BkpStnPetB4s32ZiJRMlk  
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rMMD30gH6QoP3cq7PGWcuZKV7hjd1tjCT  
QukwMvqV8lcq39buNplgDOWzEP5AzaXtCOFYn6RTH5SRug4hKNN7sT1eYMsIHu7wtEBDKVgrLjOCe/  
W2f8rLT1zEsoAW2ChLZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjwbwS/RbJh3slwICRLU08kEo04Z9H/  
AgMBAAEcggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/  
HlfvCarftGgMaYWPSNcJRMXB7tPwpQu19esjz4Z/  
cR2Je4fTLPrffGUsHFgZjv5OQBZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8ISETq8YaXngBO6vES9LMhHkNK  
Krciu9YkInNEHu6uRj5g/eGGX3KQynTvLhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9MEGpYfI6AdHlwFZcT/  
RNAxhP82lg2gUJSgAu66FFDjMwQXKbafKdP3zq4Up8a7AlekrquPtfv1vWklg  
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    "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-----  
MIIC4TCCAcmgAwIBAgICEREwDQYJKoZIhvcNAQELBQAQFzEVMBMGA1UEAxMmTXIDb21wYW55IENBMB4X  
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wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29thwQKuUvJhwR/  
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+77s96i3l\n-----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](#).

4.5.2 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 4-78 Path Parameters

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

Table 4-79 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. Value range: 0–2000 Default value: 2000
page_reverse	No	Boolean	Specifies whether to use reverse query. Value options: <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 of strings	Specifies a certificate ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> .
name	No	Array of strings	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 of strings	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 of strings	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 of strings	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 of strings	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 of strings	Specifies the fingerprint of the certificate. Multiple values can be queried in the format of <i>fingerprint=xxx&fingerprint=xxx</i> .

Request Parameters

Table 4-80 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 4-81 Response body parameters

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

Table 4-82 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result. When page_reverse is set to true , this parameter is used together to query resources on the previous page.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

Table 4-83 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.
domain	String	Specifies the domain names used by the server certificate. This parameter will take effect only when type is set to server . Note the following when specifying a domain name: <ul style="list-style-type: none">• The value can contain 0 to 10,000 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 100 domain names are allowed.• 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 that starts with *. Example: *.test.com
id	String	Specifies the certificate ID.
name	String	Specifies the certificate name.

Parameter	Type	Description
private_key	String	Specifies the private key of the certificate used by HTTPS listeners. The value must be PEM encoded characters. <ul style="list-style-type: none">This parameter will be ignored even if type is set to client. The certificate can still be created and used normally.This parameter is valid and mandatory only when type is set to server.
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.

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 certificatehhh",
    "private_key" : "-----BEGIN PRIVATE KEY-----
MIIIEvgIBADANBgkqhkiG9w0BAQEFAASCBCgwwggSkAgEAAoIBAQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J
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+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rMMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCT
```

```
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+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 certificatehhh",  
"private_key" : "-----BEGIN PRIVATE KEY-----  
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+4fpCMn9Okf43AE2yAOaAP94GdzdDJKxfciXKcsYr9lIukfaoXgjkR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO3  
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  "certificate" : "-----BEGIN CERTIFICATE-----  
MIIC4TCCAcmgAwIBAgICERewDQYJKoZIhvcNAQELBQAwwFQZEVMBMGA1UEAxMmTXlDb21wYW55IENBMB4X  
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  "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-----  
MIIEvgIBADANBgkqhkiG9wOBAQEFAASCBKgwggSkAgEAAoIBAQQDQVAbOLe5Xnf4M253Wn9vhdUzojetjv4J  
+B7kYwsMhRcgdcj8KcN1nfzTvl2ksXITQ2o9BkpStnPetB4s32ZiRMIk  
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH172luna7rMMD30gH6QoP3cq7PGWcuZKV7hjd1tjCT  
QukwMvqV8lq39buNplgDOWzEP5AqzXtCOFYn6RTH5SRug4hKNN7sT1eYMSlHu7wtEBDKVrLjOce/  
W2f8rLT1zEsoAW2ChZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwLCRLU08kEo04Z9H/  
AgMBAAECCgEAEleaQqHCWZk/HyYN0Am/GJSgFa2TD60SXY2fUieh8/  
HlfvCARftGgMaYWPNSCJRMXB7tPwpQu19esjz4Z/  
cR2Je4TLPrffGUsHfGzjv5OQBZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8ISETq8YaXngBO6vES9LMhHkNK  
Krciu9YkInNEHu6uRJ5g/eGGX3KQynTvIhnOVGAJvJTXcoU6fm7gYdHAD6jk9lc9MEGpFYI6AdHlWfZcT/  
RNAXhP82lg2gUJSgAu66FFdJmWQXKbafKdP3zq4Up8a7AlekrguPtfV1vWklg  
+bUfhgGaiAEYTpAUN9t2DvliijgQKBgQDnYMMsaF0r557CM1CTXUqgCZo8MKeV2jf2drLxRRwRl33SksQbzAQ/  
qrLd77GP3sCGqvkvWY2FPdFYf8kxGcCeZPcleZYQCAM41pjtsaM8tVbLWVVR8UtGBuQoP5ph7JNF3Tm/JH/  
fbwjP7dt7n8EzkRUNE6aIMHOFeych/  
PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgYK4aLriWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGIV57y  
QiyWU  
+wthAr9urbWYdGZIS6VjoTkF6r7VZoLXX0fBuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBUxs40yldp6w  
KBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jr4eB1lVQhELGI9CbKSdzKM71GyElmix/  
T7FnSHIWlho1qVo6AQyduNwnAQD15pr8KAdXGAZZ1FQcb3KYa  
+2fflERmazdOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak/735uP20KKqhNehZpC2dJei7OilgRhCS/  
dkASUXHSW4fptBnUxACYocdDxtY4VhafI7FPMdvG18ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa  
+2cFm1Agf7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9ojHjWB7pQIUyPt  
ZO9dm  
+4fpCMn9Okf43AE2yAOaAP94GdzdDJKxfciXKcsYr9lIukfaoXgjkR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO3  
8a5gZaOm/BUIGKMWXzuEd3fy+1rCuWzOp9LSjtYf4ege-----END PRIVATE KEY-----",  
  "certificate" : "-----BEGIN CERTIFICATE-----  
MIIC4TCCAcmgAwIBAgICERewDQYJKoZIhvcNAQELBQAwwFQZEVMBMGA1UEAxMmTXlDb21wYW55IENBMB4X  
DTE4MDcwMjEzZmU0N1oXDTQ1MTEyNzEzZmU0N1owFDESMBAGA1UEAwwJbG9yYXob3N0MIIBIjANBgkqh  
kiG9wOBAQEFAAOCAQ8AMIIBCgKCAQEAFQZi3ucTX+DNud1p/  
b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5U0NqPQZKURzZ3rQeLN9mYiUTJZPutYFDDbB8CtIqV  
+eyU9yYsIWx/Bm5kWNPh97B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/  
W7jaSiAzlsx+QM6l7QjhWj+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/  
Ky09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPILZUUn7yw3nkOOTLMI28IEv0WyYd7CMJQks1NPJBKNOGfR/  
wlDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29thwQKuUvJhwR/
```

```
AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBCwUAA4IBAQA8IMQJxaTey7EjXtRSLVI
EAMftAQPG6jjjNQuvIBQYUDauDT4W2XUZ5wAnjiOyQ83va672K1G9s8n6xLH
+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDaezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPR
LYlzp1HMnl6hkjPk4PCZwKnh40dlScati9CCt3UzXSNJOSLalKdHrH08lqd+1BchScxCfk0xNITn1HZZGml
+vbmunok3A2luc14rnsrbcGyqxGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/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](#).

4.5.3 Querying the Details of a Certificate

Function

This API is used to query the details of an SSL certificate.

Calling Method

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

URI

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

Table 4-84 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 4-85 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 4-86 Response body parameters

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

Table 4-87 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.

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> <p>Note the following when specifying a domain name:</p> <ul style="list-style-type: none">• The value can contain 0 to 10,000 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 100 domain names are allowed.• 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 that starts with *. Example: *.test.com
id	String	Specifies the certificate ID.
name	String	Specifies the certificate name.
private_key	String	<p>Specifies the private key of the certificate used by HTTPS listeners. The value must be PEM encoded characters.</p> <ul style="list-style-type: none">• This parameter will be ignored even if type is set to client. The certificate can still be created and used normally.• This parameter is valid and mandatory only when type is set to server.
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.

Parameter	Type	Description
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.

Example Requests

Querying the details of a certificate

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/certificates/5494a835d88f40ff940554992f2f04d4
```

Example Responses

Status code: 200

Successful request.

```
{
  "certificate": {
    "id": "5494a835d88f40ff940554992f2f04d4",
    "project_id": "99a3fff0d03c428eac3678da6a7d0f24",
    "name": "https_certificatekkkk",
    "type": "server",
    "domain": null,
    "description": "description for certificatehhh",
    "private_key": "-----BEGIN PRIVATE KEY-----
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBAQgAgEAAoIBAQDQVAbOle5xNf4M253Wn9vhdUzojetjv4J
+B7kYwMhRcgccl8KcN1nfzTvl2ksXITQ2o9BkpStnPetB4s32ZiJRMlk
+61iUUMNsHwK2WBX57T3JgmyVbH8GbmRY0+H3sH1i72luna7rMMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCT
QukwMvqV8lcq39buNplgDOWzEP5AzaqXtCOFYn6RTH5SRug4hKNN7sT1eYMslHu7wtEBDKVgrLjOCe/
W2f8rLT1zEsoAW2ChlZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjwbwS/RbJh3slwLCRLU08kEo04Z9H/
AgMBAACGgEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/
HlfvCArftGgMaYWPSNCRJMXB7tPwpQu19esjz4Z/
cR2Je4fTLPrffGUsHFgZjv5OQBZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNK
Krciu9YklNNEHu6uRJ5g/eGGX3KQynTvIhnOVGAJvjTXcoU6fm7gYdHAD6jk9MEGpFYl6AdHlwFzCT/
RNAxhP82lg2gUJSgAu66FFdJmWQXKbafKdp3zq4Up8a7AlekrquPtfv1vWklg
+bUFhgGaiAEYTpAUN9t2DVIijgQKBgQDnYMMsaF0r557CM1CTXUqgCZo8MKeV2jfdrlxRRwRL33SksQbzAQ/
qrLdT7GP3sCGqvkvWY2FPdFYf8kxGcCeZPcleZYCQAM41pjtsaM8tVbLWVWR8UtGBuQoPSph7JNF3Tm/JH/
fbwjP7dtU7n8EzkRUNE6aIMHOFEEych/
PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgYK4aLriWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7y
QiYWU
+wthAr9urbWYdGZIS6VjoTkF6r7VZolLXXofbuXh6lm8K8lQRfBpJff56p9phMwaBpDNrfrpHB5utBUxs40Yldp6w
KBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB1lVQhELGI9CbKsDzKM71GyElmix/
T7FnjSHIWho1qVo6AQyduNwnAQD15pr8KAdGXAZZ1FQcb3KYa
+2fflERmazedOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak/735uP20KKqhNehZpC2dJei7OilRhCS/
dKASUXHSW4fptBnUxACYodDxtY4Vhaf17FPMdvgI8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa
+2cFm1Agf7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqLLAogBAJKD4wHW54PwD4Ctfk9ojHjWB7pQUiYpT
ZO9dm
+4fpCMn9Okf43AE2yAOaAP94GdzdDJKxfciXKcsYr9lIukfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO3
8a5gZaOm/BUIGKMWXzuEd3fy+1rCUwzOp9LSjtYf4ege-----END PRIVATE KEY-----",
    "certificate": "-----BEGIN CERTIFICATE-----
MIIC4TCCAcmgAwIBAgICEREwDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMNTXIDb21wYW55IENBMB4X
DTE4MDcwMjEzMDU0N1oXDTE4MDU0N1oXDTE4MDU0N1owFDESMBAGA1UEAwwjBj9jYWxob3N0M0M0IENBMB4X
kiG9w0BAQEFAAOCAQ8AMIIBBgKCAQEA0FQgzi3ucTX+DNud1p/
b4XVM613rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5U0NqPQZKUrZz3rQeLN9mYiUTJPutYFDDB8CtIlgV
+eyU9yYJslWx/Bm5kWNPh97B9y9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6fCHKt/
```



```
W7jaSIAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/
Ky09cxLKAFtgoZWQD2FAZJf9F7k1kYNwqITz3CPLZUUn7yw3nkOOTLMI28IEv0WYy7d7CMJQKS1NPJBKNOGfR/
wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29thwQKuUvJhwR/
AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCSpGSIb3DQEBCwUAA4IBAQA8IMQJxaTey7EjXtRLSVL
EAMftAQPG6jijNQUVBQYUDauDT4W2XUZ5wAnjiOyQ83va672K1G9s8n6xIH
+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDaezmsCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPR
LYlp1HMnl6hkjPk4PCZwKnh0dlScati9CCt3UzXSNJOSLalKdHErH08lqd+1BchScxCfk0xNITn1HZZGml
+vbmunok3A2luci14rnsrbcgYqXGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/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.

Error Codes

See [Error Codes](#).

4.5.4 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 4-88 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 4-89 Request header parameters

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

Table 4-90 Request body parameters

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

Table 4-91 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.
name	No	String	Specifies the certificate name.

Parameter	Mandatory	Type	Description
private_key	No	String	<p>Specifies the private key of the server certificate. The value must be PEM encoded. Maximum 8,192-character length is allowed.</p> <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.
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> <p>Note the following when specifying a domain name:</p> <ul style="list-style-type: none">• The value can contain 0 to 10,000 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 100 domain names are allowed.• 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 that starts with *. Example: *.test.com

Response Parameters

Status code: 200

Table 4-92 Response body parameters

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

Table 4-93 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.
domain	String	Specifies the domain names used by the server certificate. This parameter will take effect only when type is set to server . Note the following when specifying a domain name: <ul style="list-style-type: none">• The value can contain 0 to 10,000 characters and consists of multiple common domain names or wildcard domain names separated by commas. A maximum of 100 domain names are allowed.• 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 that starts with *. Example: *.test.com
id	String	Specifies the certificate ID.

Parameter	Type	Description
name	String	Specifies the certificate name.
private_key	String	Specifies the private key of the certificate used by HTTPS listeners. The value must be PEM encoded characters. <ul style="list-style-type: none">This parameter will be ignored even if type is set to client. The certificate can still be created and used normally.This parameter is valid and mandatory only when type is set to server.
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.

Example Requests

Modifying the name and description of a certificate

```
PUT https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/certificates/  
233a325e5e3e4ce8bbeb320aa714cc12
```

```
{  
  "certificate": {  
    "name": "My Certificate",  
    "description": "Update my Certificate."  
  }  
}
```

Example Responses

Status code: 200

Successful request.

```
{  
  "certificate": {
```

```

"private_key" : "-----BEGIN PRIVATE KEY-----
MIIEVgIBADANBgkqhkiG9w0BAQEFAASCBCgwwgSkAgEAAoIBAQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J
+B7kYwsMhRcgdcJ8KCnX1nfzTvl2ksXITQ2o9BkpStnPetB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1172luna7rMMD30gH6QoP3cq7PGWcuZKV7hjd1tjCT
QukwMvqV8lcq39buNplgDOWzEP5AzqXtCOFYn6RTH5SRug4hKNN7sT1eYMslHu7wtEBDKVgrLjOce/
W2f8rLT1zEsoAW2ChlZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwLCRLU08kEo04Z9H/
AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/
HlFvCARftGgMaYWPNSCJRMXB7tPwpQu19esjz4Z/
cR2Je4fTLPrffGUsHFgZjv5OQBZVe4a5Hj1OcgJYhwCqPs2d9i2wToYnBbcfgh8lSETq8YaXngBO6vES9LmHhKNK
Krciu9YkInNEHu6uRJ5g/eGGX3KQynTvVlnOVGAJvJTXcoU6fm7gYdHAD6jk9lc9MEGpfYl6AdHlwFZcT/
RNAXhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7AlekrquPtfV1vWklg
+buFhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CTXUqgCZ08MKeV2jf2drLxRRwRL33SksQbzAQ/
qrLdT7GP3sCGqvkxWY2FPdFYf8kxGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/
fbwjP7dtJ7n8EzkRUNE6aIMHOFeych/
PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLriWgTWHXPzXUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7y
QiYWU
+wthAr9urbWYdGZIS6VjoTkF6r7VZoLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrpHB5utBUxs40yldp6w
KBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jr4eB1lVQhELGI9CbKsDzKM71GyElmix/
T7FnSHIWlho1qVo6AQyduNwnAQD15pr8KAdXGAZZ1FQcb3KYa
+2fflERmazdOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak/735uP20KKqhNehZpC2dJei7OilRhCS/
dKASUXHSW4fptBnUxACYocdDxtY4Vhaf17FPMdvG18ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAovela
+2cFm1Agf7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqLLAogBAJkD4wHW54PwD4Ctcf9ojHjWB7pQUYpT
ZO9dm
+4fpCm9Okf43AE2yAOaAP94GdzdDjKxfciXKcsYr9lIukfaoXgjKR7p1zERiWzUff63SB4aiyX1H7IX0MwHDZQO3
8a5gZaOm/BUIGKMWXzuEd3fy+1rCUwzOp9LSjtYf4eeg-----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-----
MIIC4TCCAcmgAwIBAgICERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMmTXlDb21wYW55IENBMB4X
DTE4MDcwMjEzMTU0N1oXDTQ1MTE5NzEzMTU0N1owFDESMBAGA1UEAwwJbG9jYXRob3N0MlIiBjANBgkqh
kiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAFQZi3ucTX+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5U0NqPQZKURz3rQeLN9mYiUTJZPutYFDDB8CtLgV
+eyU9yYJslWx/Bm5kWNPh97B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/
W7jaSIazlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/
Ky09cxLKAFTgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7yw3nkOOTLMI28IEv0WYyD7CMJQks1NPJBKNOGfr/
wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29thwQKuUvJhWR/
AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBCwUAA4IBAQA8lMQJxaTey7EjXtRSLVl
EAMftAQPG6jijNquvIBQYUDauDT4W2XUZ5wAnjiOyQ83va672K1G9s8n6xIH
+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDaezmcCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPR
LYlzp1HMnl6hkjPk4PCZwKnha0dlScati9CCt3UzXSNJOSLalKdHrH08lqd+1BchScxCfk0xNITn1HZZGml
+vbmunok3A2lucl14rnsrbcGyqXGikySN6B2cRLBDK4Y3wChiW6NVyTvcx5/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" : "d9abea6b-98ee-4ad4-8c5d-185ded48742f"
}

```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.5.5 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 4-94 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 4-95 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](#).

4.6 Security Policy

4.6.1 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 4-96 Path Parameters

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

Request Parameters

Table 4-97 Request header parameters

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

Table 4-98 Request body parameters

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

Table 4-99 CreateSecurityPolicyOption

Parameter	Mandatory	Type	Description
name	No	String	Specifies the name of the custom security policy. The default value is "".
description	No	String	Provides supplementary information about the custom security policy. The default value is "".
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 .

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:</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_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.

Response Parameters

Status code: 201

Table 4-100 Response body parameters

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

Table 4-101 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 4-102 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-e8a9837d8e75",
  "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](#).

4.6.2 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 4-103 Path Parameters

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

Table 4-104 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. Value range: 0–2000 Default value: 2000

Parameter	Mandatory	Type	Description
page_reverse	No	Boolean	Specifies whether to use reverse query. Value options: <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 of strings	Specifies the ID of the custom security policy. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> .
name	No	Array of strings	Specifies the name of the custom security policy. Multiple names can be queried in the format of <i>name=xxx&name=xxx</i> .
description	No	Array of strings	Provides supplementary information about the custom security policy. Multiple descriptions can be queried in the format of <i>description=xxx&description=xxx</i> .
protocols	No	Array of strings	Specifies the TLS protocols supported by the custom security policy. (Multiple protocols are separated using spaces.) Multiple protocols can be queried in the format of <i>protocols=xxx&protocols=xxx</i> .

Parameter	Mandatory	Type	Description
ciphers	No	Array of strings	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 4-105 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 4-106 Response body parameters

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

Table 4-107 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 4-108 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-109 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result. When page_reverse is set to true , this parameter is used together to query resources on the previous page.
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](#).

4.6.3 Querying the Details of a Custom Security Policy

Function

This API is used to query the details of a custom security policy.

Calling Method

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

URI

GET /v3/{project_id}/elb/security-policies/{security_policy_id}

Table 4-110 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 4-111 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 4-112 Response body parameters

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

Table 4-113 SecurityPolicy

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

Parameter	Type	Description
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 4-114 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Example Requests

Querying the details of a custom security policy

```
GET https://{ELB_Endpoint}/v3/7a9941d34fc1497d8d0797429ecfd354/elb/security-policies/  
c73e0138-9bdc-40fb-951e-6a1598266ccd
```

Example Responses

Status code: 200

Successful request.

```
{  
  "security_policy": {  
    "id": "c73e0138-9bdc-40fb-951e-6a1598266ccd",  
    "name": "update_securitypolicy",  
    "project_id": "7a9941d34fc1497d8d0797429ecfd354",  
    "description": "",  
    "protocols": [ "TLSv1", "TLSv1.1", "TLSv1.2", "TLSv1.3" ],  
    "ciphers": [ "AES128-SHA", "AES256-GCM-SHA384", "ECDHE-ECDSA-AES128-GCM-SHA256", "ECDHE-  
RSA-AES256-GCM-SHA384", "ECDHE-RSA-AES256-SHA", "TLS_AES_128_GCM_SHA256",  
"TLS_AES_256_GCM_SHA384", "TLS_CHACHA20_POLY1305_SHA256", "TLS_AES_128_CCM_SHA256",
```

```
"TLS_AES_128_CCM_8_SHA256" ],
  "listeners" : [ {
    "id" : "8e92b7c3-cdae-4039-aa62-c76d09a5950a"
  } ],
  "created_at" : "2021-03-20T09:48:14Z",
  "updated_at" : "2021-03-20T12:45:50Z"
},
"request_id" : "dab5d1de-c115-4623-b21d-363478fa0af4"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.6.4 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 4-115 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 4-116 Request header parameters

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

Table 4-117 Request body parameters

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

Table 4-118 UpdateSecurityPolicyOption

Parameter	Mandatory	Type	Description
name	No	String	Specifies the name of the custom security policy.
description	No	String	Provides supplementary information about the custom security policy.
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

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_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.

Response Parameters

Status code: 200

Table 4-119 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. Note: The value is automatically generated.

Table 4-120 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 4-121 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](#).

4.6.5 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 4-122 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 4-123 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](#).

4.6.6 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 4-124 Path Parameters

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

Request Parameters

Table 4-125 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 4-126 Response body parameters

Parameter	Type	Description
system_security_policies	Array of SystemSecurityPolicy objects	Lists system security policies.

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

Table 4-127 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",
  "ciphers": "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-ECDSA-AES256-
SHA:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-
GCM-SHA384:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-RSA-AES256-
SHA384:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:AES128-SHA:AES256-SHA"
}, {
  "name": "tls-1-2-strict",
  "project_id": "7a9941d34fc1497d8d0797429ecfd354",
  "protocols": "TLSv1.2",
  "ciphers": "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-
GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-RSA-AES128-SHA256:AES128-
SHA256:AES256-SHA256:ECDHE-RSA-AES256-SHA384"
}, {
  "name": "tls-1-2-fs",
  "project_id": "7a9941d34fc1497d8d0797429ecfd354",
  "protocols": "TLSv1.2",
  "ciphers": "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-
GCM-SHA256:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-AES256-SHA384"
}, {
  "name": "tls-1-0-with-1-3",
  "project_id": "7a9941d34fc1497d8d0797429ecfd354",
  "protocols": "TLSv1.3 TLSv1.2 TLSv1.1 TLSv1",
  "ciphers": "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-ECDSA-AES256-
SHA:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-
GCM-SHA384:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-RSA-AES256-
SHA384:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:AES128-SHA:AES256-
SHA:TLS_AES_128_GCM_SHA256:TLS_AES_256_GCM_SHA384:TLS_CHACHA20_POLY1305_SHA256:TLS_AES_1
28_CCM_SHA256:TLS_AES_128_CCM_8_SHA256"
}, {
  "name": "tls-1-2-fs-with-1-3",
  "project_id": "7a9941d34fc1497d8d0797429ecfd354",
  "protocols": "TLSv1.3 TLSv1.2",
  "ciphers": "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-
GCM-SHA256:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-AES256-
SHA384:TLS_AES_128_GCM_SHA256:TLS_AES_256_GCM_SHA384:TLS_CHACHA20_POLY1305_SHA256:TLS_A
ES_128_CCM_SHA256:TLS_AES_128_CCM_8_SHA256"
}, {
  "name": "hybrid-policy-1-0",
  "project_id": "7a9941d34fc1497d8d0797429ecfd354",
  "protocols": "TLSv1.2 TLSv1.1",
  "ciphers": "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-ECDSA-AES256-
SHA:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-
GCM-SHA384:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-RSA-AES256-
SHA384:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:AES128-SHA:AES256-SHA"
}, {
  "name": "tls-1-2-strict-no-cbc",
  "project_id": "7a9941d34fc1497d8d0797429ecfd354",
  "protocols": "TLSv1.2",
  "ciphers": "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-RSA-
AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256"
```

```
}]  
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.7 IP Address Group

4.7.1 Creating an IP Address Group

Function

This API is used to create an IP address group.

Each IP address group can contain a single IP address, IP address ranges, or CIDR blocks. Each IP address range must be in the format of *ip-ip*, for example, 10.12.3.1-10.12.3.10. Both IPv4 and IPv6 addresses are supported.

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 4-128 Path Parameters

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

Request Parameters

Table 4-129 Request header parameters

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

Table 4-130 Request body parameters

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

Table 4-131 CreateIpGroupOption

Parameter	Mandatory	Type	Description
project_id	No	String	Specifies the project ID of the IP address group.
description	No	String	Provides supplementary information about the IP address group.
name	No	String	Specifies the IP address group name.
ip_list	Yes	Array of CreateIpGroupOption objects	Specifies the IP addresses or CIDR blocks in the IP address group. [] indicates any IP address.
enterprise_project_id	No	String	Specifies the ID of the enterprise project that the IP address group belongs to.

Table 4-132 CreatelpGroupIpOption

Parameter	Mandatory	Type	Description
ip	Yes	String	Specifies the IP addresses in the IP address group. An IP address range can be in the format of <i>ip-ip</i> , for example, 192.168.1.2-192.168.2.253 or 2001:0DB8:02de::0e12-2001:0DB8:02de::0e13. The end IP address must be greater than the start IP address.
description	No	String	Provides remarks about the IP address group.

Response Parameters

Status code: 201

Table 4-133 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. Note: The value is automatically generated.

Table 4-134 IpGroup

Parameter	Type	Description
id	String	Specifies the ID of the IP address group.
name	String	Specifies the IP address group name.
description	String	Provides supplementary information about the IP address group.
ip_list	Array of IpInfo objects	Specifies the IP addresses or CIDR blocks in the IP address group. [] indicates any IP address.
listeners	Array of ListenerRef objects	Lists the IDs of listeners with which the IP address group is associated.

Parameter	Type	Description
project_id	String	Specifies the project ID of the IP address group.
enterprise_project_id	String	Specifies the ID of the enterprise project that the IP address group belongs to.
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 4-135 IpInfo

Parameter	Type	Description
ip	String	Specifies the IP addresses in the IP address group.
description	String	Provides remarks about the IP address group.

Table 4-136 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](#).

4.7.2 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 4-137 Path Parameters

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

Table 4-138 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. Value range: 0–2000 Default value: 2000
page_reverse	No	Boolean	Specifies whether to use reverse query. Value options: <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 of strings	Specifies the ID of the IP address group.
name	No	Array of strings	Specifies the name of the IP address group.

Parameter	Mandatory	Type	Description
description	No	Array of strings	Provides supplementary information about the IP address group.
ip_list	No	Array of strings	Lists the IP addresses in the IP address group. Multiple IP addresses are separated with commas.
enterprise_project_id	No	Array of strings	<p>Specifies the ID of the enterprise project.</p> <ul style="list-style-type: none">• If enterprise_project_id is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The elb:ipgroups:list permission must be assigned to the user group.• If enterprise_project_id is specified, the value can be a specific enterprise project ID or all_granted_eps. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is all_granted_eps, resources in the enterprise projects with the elb:ipgroups:list permission are queried. <p>Multiple values can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p>

Request Parameters

Table 4-139 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 4-140 Response body parameters

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

Table 4-141 IpGroup

Parameter	Type	Description
id	String	Specifies the ID of the IP address group.
name	String	Specifies the IP address group name.
description	String	Provides supplementary information about the IP address group.
ip_list	Array of IpInfo objects	Specifies the IP addresses or CIDR blocks in the IP address group. [] indicates any IP address.
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 ID of the enterprise project that the IP address group belongs to.
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 4-142 IpInfo

Parameter	Type	Description
ip	String	Specifies the IP addresses in the IP address group.
description	String	Provides remarks about the IP address group.

Table 4-143 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-144 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result. When page_reverse is set to true , this parameter is used together to query resources on the previous page.
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](#).

4.7.3 Querying the Details of an IP Address Group

Function

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

Calling Method

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

URI

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

Table 4-145 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 4-146 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 4-147** Response body parameters

Parameter	Type	Description
ipgroup	IpGroup object	Specifies the response body for querying the details of the IP address group.
request_id	String	Specifies the request ID. Note: The value is automatically generated.

Table 4-148 IpGroup

Parameter	Type	Description
id	String	Specifies the ID of the IP address group.
name	String	Specifies the IP address group name.
description	String	Provides supplementary information about the IP address group.
ip_list	Array of IpInfo objects	Specifies the IP addresses or CIDR blocks in the IP address group. [] indicates any IP address.
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 ID of the enterprise project that the IP address group belongs to.

Parameter	Type	Description
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 4-149 IpInfo

Parameter	Type	Description
ip	String	Specifies the IP addresses in the IP address group.
description	String	Provides remarks about the IP address group.

Table 4-150 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Example Requests

Querying the details of an IP address group

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

Example Responses

Status code: 200

Successful request.

```
{  
  "ipgroup" : {  
    "description" : "",  
    "id" : "8722e0e0-9cc9-4490-9660-8c9a5732fbb0",  
    "name" : "test_ipg",  
    "project_id" : "45977fa2dbd7482098dd68d0d8970117",  
    "ip_list" : [ {  
      "ip" : "192.168.1.123",  
      "description" : ""  
    }, {  
      "ip" : "192.168.3.0/24",  
      "description" : "test_ip"  
    } ],  
    "listeners" : [ {  
      "id" : "88f9c079-29cb-435a-b98f-0c5c0b90c2bd"  
    }, {  
      "id" : "2f4c9644-d5d2-4cf8-a3c0-944239a4f58c"  
    } ]  
  }  
}
```



```
  }],  
  "created_at" : "2018-01-16T03:19:16",  
  "updated_at" : "2018-01-16T03:19:16"  
  }  
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.7.4 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.

Each IP address group can contain a single IP address, IP address ranges, or CIDR blocks. Each IP address range must be in the format of *ip-ip*, for example, 10.12.3.1-10.12.3.10. Both IPv4 and IPv6 addresses are supported.

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 4-151 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 4-152 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
ipgroup	Yes	UpdateIpGroupOption object	Specifies the request body for updating the IP address group.

Table 4-154 UpdateIpGroupOption

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

Table 4-155 UpdatelpGroupIpOption

Parameter	Mandatory	Type	Description
ip	Yes	String	Specifies the IP addresses or IP address ranges in the IP address group. IPv4 and IPv6 addresses are supported. An IP address range can be in the format of <i>ip-ip</i> , for example, 192.168.1.2-192.168.2.253 or 2001:0DB8:02de::0e12-2001:0DB8:02de::0e13. The end IP address must be greater than the start IP address. Specified IP addresses that are not already in the IP address group will be added; existing ones will have their descriptions updated.
description	No	String	Provides remarks about the IP address group.

Response Parameters

Status code: 200

Table 4-156 Response body parameters

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

Table 4-157 IpGroup

Parameter	Type	Description
id	String	Specifies the ID of the IP address group.
name	String	Specifies the IP address group name.
description	String	Provides supplementary information about the IP address group.

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.
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 ID of the enterprise project that the IP address group belongs to.
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 4-158 IpInfo

Parameter	Type	Description
ip	String	Specifies the IP addresses in the IP address group.
description	String	Provides remarks about the IP address group.

Table 4-159 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](#).

4.7.5 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 4-160 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 4-161 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](#).

4.7.6 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 4-162 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 4-163 Request header parameters

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

Table 4-164 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 4-165 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.

Parameter	Mandatory	Type	Description
description	No	String	Specifies supplementary information about the IP address group.

Table 4-166 UpdatelpGroupIpOption

Parameter	Mandatory	Type	Description
ip	Yes	String	Specifies the IP addresses or IP address ranges in the IP address group. IPv4 and IPv6 addresses are supported. An IP address range can be in the format of <i>ip-ip</i> , for example, 192.168.1.2-192.168.2.253 or 2001:0DB8:02de::0e12-2001:0DB8:02de::0e13. The end IP address must be greater than the start IP address. Specified IP addresses that are not already in the IP address group will be added; existing ones will have their descriptions updated.
description	No	String	Provides remarks about the IP address group.

Response Parameters

Status code: 200

Table 4-167 Response body parameters

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

Table 4-168 IpGroup

Parameter	Type	Description
id	String	Specifies the ID of the IP address group.
name	String	Specifies the IP address group name.
description	String	Provides supplementary information about the IP address group.
ip_list	Array of IpInfo objects	Specifies the IP addresses or CIDR blocks in the IP address group. [] indicates any IP address.
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 ID of the enterprise project that the IP address group belongs to.
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 4-169 IpInfo

Parameter	Type	Description
ip	String	Specifies the IP addresses in the IP address group.
description	String	Provides remarks about the IP address group.

Table 4-170 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](#).

4.7.7 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 4-171 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 4-172 Request header parameters

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

Table 4-173 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 4-174 BatchDeleteIpListOption

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

Table 4-175 IpGroupIp

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

Response Parameters

Status code: 200

Table 4-176 Response body parameters

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

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	Provides supplementary information about the IP address group.
ip_list	Array of IpInfo objects	Specifies the IP addresses or CIDR blocks in the IP address group. [] indicates any IP address.
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 ID of the enterprise project that the IP address group belongs to.
created_at	String	Specifies the time when the IP address group was created.

Parameter	Type	Description
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.

Table 4-179 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](#).

4.8 Listener

4.8.1 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.

Calling Method

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

URI

POST /v3/{project_id}/elb/listeners

Table 4-180 Path Parameters

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

Request Parameters

Table 4-181 Request header parameters

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

Table 4-182 Request body parameters

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

Table 4-183 CreateListenerOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the listener. The value can only be true .
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.
client_ca_tls_container_ref	No	String	Specifies the ID of the CA certificate used by the listener. Note: <ul style="list-style-type: none">This parameter is available only when type is set to client.This parameter is not available if the listener protocol is QUIC.

Parameter	Mandatory	Type	Description
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 .
description	No	String	Provides supplementary information about the listener.
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. Request forwarding using HTTP/2 improves the access performance between your application and the load balancer. However, the load balancer still uses HTTP/1.x to forward requests to the backend server. Note: <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.• For QUIC listeners, it cannot be set and the response is fixed at true.
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.

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.
project_id	No	String	Specifies the project ID.
protocol	Yes	String	Specifies the protocol used by the listener. The value can be TCP , UDP , HTTP , HTTPS , TERMINATED_HTTPS , QUIC , or TLS . Note: <ul style="list-style-type: none">• Protocol used by HTTPS listeners added to a shared load balancer can only be set to TERMINATED_HTTPS. If HTTPS is passed, the value will be automatically changed to TERMINATED_HTTPS.• Protocol used by HTTPS listeners added to a dedicated load balancer can only be set to HTTPS. If TERMINATED_HTTPS is passed, the value will be automatically changed to HTTPS.
protocol_port	No	Integer	Specifies the port used by the listener. Note: <ul style="list-style-type: none">• 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.• The port of HTTP or TERMINATED_HTTPS listeners added to a shared load balancer cannot be 21.

Parameter	Mandatory	Type	Description
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 50.
sni_match_algo	No	String	Specifies how wildcard domain name matches with the SNI certificates used by the listener. Value options: <ul style="list-style-type: none">• longest_suffix: indicates longest suffix match.• wildcard (default): indicates wildcard match.
tags	No	Array of Tag objects	Lists the tags.
tls_ciphers_policy	No	String	Specifies the security policy used by the listener. Note:
security_policy_id	No	String	Specifies the ID of the custom security policy. Note:

Parameter	Mandatory	Type	Description
enable_member_retry	No	Boolean	<p>Specifies whether to enable health check retries for backend servers.</p> <p>Value options:</p> <ul style="list-style-type: none">• true (default): Health check retries will be enabled.• false: Health check retries will be disabled. <p>Note:</p> <ul style="list-style-type: none">• If a shared load balancer is associated, this parameter is available only when protocol is set to HTTP or TERMINATED_HTTPS.• If a dedicated load balancer is associated, this parameter is available only when protocol is set to HTTP, HTTPS, or QUIC.
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> <p>Value ranges:</p> <ul style="list-style-type: none">• For TCP listeners, the value ranges from 10 to 4000, and the default value is 300.• For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0 to 4000, and the default value is 60. <p>Note: This parameter is not supported by UDP listeners of shared load balancers.</p>

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>
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>
ipgroup	No	CreateListenerIpGroupOption object	<p>Specifies the IP address group associated with the listener. The value can be null, or left blank, or be an empty JSON structure ({}), indicating that no IP address group is associated with the listener. ipgroup_id is also required if you want to associate an IP address group with the listener.</p>

Parameter	Mandatory	Type	Description
transparent_client_ip_enable	No	Boolean	<p>Specifies whether to pass source IP addresses of the clients to backend servers.</p> <p>Value options:</p> <ul style="list-style-type: none">• TCP or UDP listeners of shared load balancers: The value can be true or false, and the default value is false if this parameter is not passed.• HTTP or HTTPS listeners of shared load balancers: The value can only be true, and the default value is true if this parameter is not passed.• All listeners of dedicated load balancers: The value can only be true, and the default value is true if this parameter is not passed. <p>Note:</p> <ul style="list-style-type: none">• This function can only be enabled or disabled for TCP or UDP listeners of shared load balancers.• If this function is enabled, the load balancer communicates with backend servers using their real IP addresses. Ensure that security group rules and access control policies are correctly configured.• If this function is enabled, a server cannot serve as both a backend server and a client.• If this function is enabled, backend server specifications cannot be changed.

Parameter	Mandatory	Type	Description
proxy_protocol_enable	No	Boolean	Specifies whether to enable the ProxyProtocol option to pass the source IP addresses of the clients to backend servers. Note: 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.</p> <p>Value options:</p> <ul style="list-style-type: none"> • true: Enable advanced forwarding. • false (default): Disable advanced forwarding. <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. • 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 of the forwarding rule supports wildcard asterisks (*). • Parameter conditions can be specified for forwarding rules. <p>Note:</p> <ul style="list-style-type: none"> • Advanced forwarding cannot be disabled once it is enabled. • If advanced forwarding is enabled, forwarding policy priorities are defined by

Parameter	Mandatory	Type	Description
			priority . For details, see the description of the priority field in the forwarding policy.
quic_config	No	CreateListenerQuicConfigOption object	Specifies the QUIC configuration for the current listener. Note: <ul style="list-style-type: none"> This parameter is valid only when protocol is set to HTTPS. For a TCP, UDP, HTTP, or QUIC listener, if this parameter is not left blank, an error will be reported. The client sends a normal HTTP request that contains information indicating that the QUIC protocol is supported. If QUIC upgrade is enabled for the listeners, QUIC port and version information will be added to the response header. 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.
cps	No	Integer	Specifies the maximum number of new connections that a listener can handle per second. Value range: 0 to 1000000 Default value: 0 , indicating that the number is not limited. Note: If the value is greater than the number defined in the load balancer specifications, the latter is used as the limit.

Parameter	Mandatory	Type	Description
connection	No	Integer	<p>Specifies the maximum number of concurrent connections that a listener can handle per second.</p> <p>Value range: 0 to 1000000</p> <p>Default value: 0, indicating that the number is not limited.</p> <p>Note: If the value is greater than the number defined in the load balancer specifications, the latter is used as the limit.</p>
nat64_enable	No	Boolean	<p>Specifies whether to enable nat64_enable. This function enables a client to access IPv4 or IPv6 backend servers by accessing the IPv4 or IPv6 address of a load balancer.</p> <p>Constraints:</p> <p>This option can only be enabled for TCP and UDP listeners. nat64_enable is mutually exclusive with transparent_client_ip_enable.</p> <p>Value options:</p> <p>true: Enable nat64_enable.</p> <p>false: Disable nat64_enable.</p> <p>Default value: false</p>

Table 4-184 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 4-185 Tag

Parameter	Mandatory	Type	Description
key	No	String	Specifies the tag key.
value	No	String	Specifies the tag value.

Table 4-186 CreateListenerIpGroupOption

Parameter	Mandatory	Type	Description
ipgroup_id	Yes	String	Specifies the ID of the IP address group associated with the listener. Note: <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.

Parameter	Mandatory	Type	Description
enable_ipgroup	No	Boolean	Specifies whether access control is enabled. Value options: <ul style="list-style-type: none">• true: Access control is enabled.• false: Access control is disabled.
type	No	String	Specifies how access to the listener is controlled. Value options: <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 4-187 CreateListenerQuicConfigOption

Parameter	Mandatory	Type	Description
quic_listener_id	Yes	String	Specifies the ID of the QUIC listener. This parameter is mandatory for creation and is optional for update. The listener specified by 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 .
enable_quic_upgrade	No	Boolean	Specifies whether to enable QUIC upgrade. Value options: <ul style="list-style-type: none">• true: QUIC upgrade is enabled.• false: QUIC upgrade is disabled. HTTPS listeners can be upgraded to QUIC listeners.

Response Parameters

Status code: 201

Table 4-188 Response body parameters

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

Table 4-189 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. Note: 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. -1 indicates that the number of connections is not limited. Default value: -1 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.

Parameter	Type	Description
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 load balancer. Request forwarding using HTTP/2 improves the access performance between your application and the load balancer. However, the load balancer still uses HTTP/1.x to forward requests to the backend server. Note: <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.• For QUIC listeners, it cannot be set and the response is fixed at true.
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.
enterprise_project_id	String	Specifies the ID of the enterprise project.

Parameter	Type	Description
protocol	String	<p>Specifies the protocol used by the listener.</p> <p>The value can be TCP, UDP, HTTP, HTTPS, TERMINATED_HTTPS, QUIC, or TLS.</p> <p>Note:</p> <ul style="list-style-type: none"> Protocol used by HTTPS listeners added to a shared load balancer can only be set to TERMINATED_HTTPS. If HTTPS is passed, the value will be automatically changed to TERMINATED_HTTPS. Protocol used by HTTPS listeners added to a dedicated load balancer can only be set to HTTPS. If TERMINATED_HTTPS is passed, the value will be automatically changed to HTTPS.
protocol_port	Integer	<p>Specifies the port used by the listener.</p> <p>Note:</p> <ul style="list-style-type: none"> 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.
sni_container_refs	Array of strings	<p>Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener.</p> <p>Note:</p> <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 50.
sni_match_algo	String	<p>Specifies how wildcard domain name matches with the SNI certificates used by the listener.</p> <p>Value options:</p> <ul style="list-style-type: none"> longest_suffix: indicates longest suffix match. wildcard (default): indicates wildcard match.

Parameter	Type	Description
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. Note:
security_policy_id	String	Specifies the ID of the custom security policy. Note:
enable_member_retry	Boolean	Specifies whether to enable health check retries for backend servers. Value options: <ul style="list-style-type: none">• true (default): Health check retries will be enabled.• false: Health check retries will be disabled. Note: <ul style="list-style-type: none">• If a shared load balancer is associated, this parameter is available only when protocol is set to HTTP or TERMINATED_HTTPS.• If a dedicated load balancer is associated, this parameter is available only when protocol is set to HTTP, HTTPS, or QUIC.

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> <p>Value ranges:</p> <ul style="list-style-type: none">• For TCP listeners, the value ranges from 10 to 4000, and the default value is 300.• For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0 to 4000, and the default value is 60. <p>Note: This parameter is not supported by UDP listeners of shared load balancers.</p>
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>

Parameter	Type	Description
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>Value options:</p> <ul style="list-style-type: none"> • TCP or UDP listeners of shared load balancers: The value can be true or false, and the default value is false if this parameter is not passed. • HTTP or HTTPS listeners of shared load balancers: The value can only be true, and the default value is true if this parameter is not passed. • All listeners of dedicated load balancers: The value can only be true, and the default value is true if this parameter is not passed. <p>Note:</p> <ul style="list-style-type: none"> • This function can only be enabled or disabled for TCP or UDP listeners of shared load balancers. • If this function is enabled, the load balancer communicates with backend servers using their real IP addresses. Ensure that security group rules and access control policies are correctly configured. • If this function is enabled, a server cannot serve as both a backend server and a client. • If this function is enabled, backend server specifications cannot be changed.

Parameter	Type	Description
proxy_protocol_enable	Boolean	<p>Specifies whether to enable the ProxyProtocol option to pass the source IP addresses of the clients to backend servers.</p> <p>Note: This parameter is available only for TLS listeners and does not take effect for other types of listeners.</p>
enhance_l7policy_enable	Boolean	<p>Specifies whether to enable advanced forwarding. If advanced forwarding is enabled, more flexible forwarding policies and rules are supported.</p> <p>Value options:</p> <ul style="list-style-type: none"> • true: Enable advanced forwarding. • false (default): Disable advanced forwarding. <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. • 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 of the forwarding rule supports wildcard asterisks (*). • Parameter conditions can be specified for forwarding rules. <p>Note:</p> <ul style="list-style-type: none"> • Advanced forwarding cannot be disabled once it is enabled. • If advanced forwarding is enabled, forwarding policy priorities are defined by priority. For details, see the description of the priority field in the forwarding policy.

Parameter	Type	Description
quic_config	ListenerQuicConfig object	<p>Specifies the QUIC configuration for the current listener.</p> <p>Note:</p> <ul style="list-style-type: none"> This parameter is valid only when protocol is set to HTTPS. For a TCP, UDP, HTTP, or QUIC listener, if this parameter is not left blank, an error will be reported. The client sends a normal HTTP request that contains information indicating that the QUIC protocol is supported. If QUIC upgrade is enabled for the listeners, QUIC port and version information will be added to the response header. 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.
cps	Integer	<p>Specifies the maximum number of new connections that a listener can handle per second.</p> <p>Value range: 0 to 1000000</p> <p>Default value: 0, indicating that the number is not limited.</p> <p>Note: If the value is greater than the number defined in the load balancer specifications, the latter is used as the limit.</p>
connection	Integer	<p>Specifies the maximum number of concurrent connections that a listener can handle per second.</p> <p>Value range: 0 to 1000000</p> <p>Default value: 0, indicating that the number is not limited.</p> <p>Note: If the value is greater than the number defined in the load balancer specifications, the latter is used as the limit.</p>

Parameter	Type	Description
nat64_enable	Boolean	<p>Specifies whether to enable nat64_enable. This function enables a client to access IPv4 or IPv6 backend servers by accessing the IPv4 or IPv6 address of a load balancer.</p> <p>Constraints:</p> <p>This option can only be enabled for TCP and UDP listeners. nat64_enable is mutually exclusive with transparent_client_ip_enable.</p> <p>Value options:</p> <p>true: Enable nat64_enable.</p> <p>false: Disable nat64_enable.</p> <p>Default value: false</p>

Table 4-190 ListenerInsertHeaders

Parameter	Type	Description
X-Forwarded-ELB-IP	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>
X-Forwarded-Port	Boolean	<p>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.</p>
X-Forwarded-For-Port	Boolean	<p>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.</p>
X-Forwarded-Host	Boolean	<p>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.</p>

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 4-191 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-192 Tag

Parameter	Type	Description
key	String	Specifies the tag key.
value	String	Specifies the tag value.

Table 4-193 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. Note: The specified IP address group must exist, and the value cannot be null .
enable_ipgroup	Boolean	Specifies whether access control is enabled. Value options: <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. Value options: <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 4-194 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 listener specified by 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 .

Parameter	Type	Description
enable_quic_upgrade	Boolean	Specifies whether to enable QUIC upgrade. Value options: <ul style="list-style-type: none">• true: QUIC upgrade is enabled.• false: QUIC upgrade is disabled. HTTPS listeners can be upgraded to QUIC listeners.

Example Requests

- Example 1: Adding a TCP listener

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

```
{
  "listener": {
    "protocol_port": 80,
    "protocol": "TCP",
    "loadbalancer_id": "098b2f68-af1c-41a9-8efd-69958722af62",
    "name": "My listener",
    "admin_state_up": true,
    "insert_headers": {
      "X-Forwarded-ELB-IP": true
    }
  }
}
```

- Example 2: Adding an HTTPS listener

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

```
{
  "listener": {
    "protocol_port": 90,
    "protocol": "HTTPS",
    "loadbalancer_id": "098b2f68-af1c-41a9-8efd-69958722af62",
    "name": "My listener",
    "admin_state_up": true,
    "ipgroup": {
      "ipgroup_id": "0416b6f1-877f-4a51-987e-978b3f083542",
      "type": "black"
    },
    "security_policy_id": "8722e0e0-9cc9-4490-9660-8c9a5732fbb0",
    "default_tls_container_ref": "233a325e5e3e4ce8beeb320aa714cc12"
  }
}
```

Example Responses

Status code: 201

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-1-2",
"tags" : [ ],
"created_at" : "2019-04-02T00:12:32Z",
"updated_at" : "2019-04-02T00:12:32Z",
"http2_enable" : false,
"enable_member_retry" : true,
"insert_headers" : {
  "X-Forwarded-ELB-IP" : true
},
"transparent_client_ip_enable" : false,
"nat64_enable" : false
},
"request_id" : "f4c4aca8-df16-42e8-8836-33e4b8e9aa8e"
}
```

Status Codes

Status Code	Description
201	Normal response to POST requests.

Error Codes

See [Error Codes](#).

4.8.2 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 4-195 Path Parameters

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

Table 4-196 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records on each page. Value range: 0–2000 Default value: 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.
page_reverse	No	Boolean	Specifies whether to use reverse query. Value options: <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
protocol_port	No	Array of strings	Specifies the port used by the listener. Multiple ports can be queried in the format of <i>protocol_port=xxx&protocol_port=xxx</i> .
protocol	No	Array of strings	Specifies the protocol used by the listener. The value can be TCP, UDP, HTTP, HTTPS, TERMINATED_HTTPS, QUIC, or TLS . Multiple protocols can be queried in the format of <i>protocol=xxx&protocol=xxx</i> .
description	No	Array of strings	Provides supplementary information about the listener. Multiple descriptions can be queried in the format of <i>description=xxx&description=xxx</i> .
default_tls_container_ref	No	Array of strings	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 of strings	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=xxx</i> .
admin_state_up	No	Boolean	Specifies the administrative status of the listener.

Parameter	Mandatory	Type	Description
connection_limit	No	Array of integers	<p>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.</p> <p>Multiple values can be queried in the format of <i>connection_limit=xxx&connection_limit=xxx</i>.</p> <p>This parameter is unsupported. Please do not use it.</p>
default_pool_id	No	Array of strings	<p>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.</p> <p>Multiple IDs can be queried in the format of <i>default_pool_id=xxx&default_pool_id=xxx</i>.</p>
id	No	Array of strings	<p>Specifies the listener ID.</p> <p>Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i>.</p>
name	No	Array of strings	<p>Specifies the name of the listener added to the load balancer.</p> <p>Multiple names can be queried in the format of <i>name=xxx&name=xxx</i>.</p>

Parameter	Mandatory	Type	Description
http2_enable	No	Boolean	<p>Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the load balancer. Request forwarding using HTTP/2 improves the access performance between your application and the load balancer. However, the load balancer still uses HTTP/1.x to forward requests to the backend server.</p> <p>Note:</p> <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. • For QUIC listeners, it cannot be set and the response is fixed at true.
loadbalancer_id	No	Array of strings	<p>Specifies the ID of the load balancer that the listener is added to.</p> <p>Multiple IDs can be queried in the format of <i>loadbalancer_id=xxx&loadbalancer_id=xxx</i>.</p>
tls_ciphers_policy	No	Array of strings	<p>Specifies the security policy used by the listener.</p> <p>Multiple security policies can be queried in the format of <i>tls_ciphers_policy=xxx&tls_ciphers_policy=xxx</i>.</p>
member_address	No	Array of strings	<p>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.</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 of strings	<p>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.</p> <p>Multiple IDs can be queried in the format of <i>member_device_id=xxx&member_device_id=xxx</i>.</p>
enterprise_project_id	No	Array of strings	<p>Specifies the ID of the enterprise project.</p> <ul style="list-style-type: none"> If enterprise_project_id is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The elb:listeners:list permission must be assigned to the user group. If enterprise_project_id is specified, the value can be a specific enterprise project ID or all_granted_eps. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is all_granted_eps, resources in the enterprise projects with the elb:listeners:list permission are queried. <p>Multiple values can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p>
enable_member_retry	No	Boolean	<p>Specifies whether to enable health check retries for backend servers.</p> <p>The value can be true (enable health check retries) or false (disable health check retries).</p>

Parameter	Mandatory	Type	Description
member_timeout	No	Array of integers	<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>Multiple durations can be queried in the format of <i>member_timeout=xxx&member_timeout=xxx</i>.</p>
client_timeout	No	Array of integers	<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.</p> <p>Multiple durations can be queried in the format of <i>client_timeout=xxx&client_timeout=xxx</i>.</p>

Parameter	Mandatory	Type	Description
keepalive_timeout	No	Array of integers	<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> <p>Value ranges:</p> <ul style="list-style-type: none"> For TCP listeners, the value ranges from 10 to 4000. For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0 to 4000. The default value is 60. <p>Multiple values 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> <p>This parameter is only available for TCP or UDP listeners of shared load balancers.</p> <p>Value options:</p> <ul style="list-style-type: none"> true: Source IP addresses will be passed to backend servers. false: Source IP addresses will not be passed to backend servers.
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	Specifies whether to enable advanced forwarding. If you enable this function, you can configure more flexible forwarding policies and rules. <ul style="list-style-type: none">• true: Enable advanced forwarding.• false: Disable advanced forwarding.
member_instance_id	No	Array of strings	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> .
ssl_early_data_enable	No	Boolean	Specifies whether to enable zero round trip time resumption (0-RTT) for listeners.
nat64_enable	No	Boolean	Specifies a nat64_enable value for query. Resources can be queried in the format of nat64_enable=true or nat64_enable=false .

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

Status code: 200

Table 4-198 Response body parameters

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

Table 4-199 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result. When page_reverse is set to true , this parameter is used together to query resources on the previous page.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

Table 4-200 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. Note: 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. -1 indicates that the number of connections is not limited. Default value: -1 This parameter is unsupported. Please do not use it.

Parameter	Type	Description
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 load balancer. Request forwarding using HTTP/2 improves the access performance between your application and the load balancer. However, the load balancer still uses HTTP/1.x to forward requests to the backend server. Note: <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.• For QUIC listeners, it cannot be set and the response is fixed at true.
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.

Parameter	Type	Description
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.
enterprise_project_id	String	Specifies the ID of the enterprise project.
protocol	String	Specifies the protocol used by the listener. The value can be TCP , UDP , HTTP , HTTPS , TERMINATED_HTTPS , QUIC , or TLS . Note: <ul style="list-style-type: none">• Protocol used by HTTPS listeners added to a shared load balancer can only be set to TERMINATED_HTTPS. If HTTPS is passed, the value will be automatically changed to TERMINATED_HTTPS.• Protocol used by HTTPS listeners added to a dedicated load balancer can only be set to HTTPS. If TERMINATED_HTTPS is passed, the value will be automatically changed to HTTPS.
protocol_port	Integer	Specifies the port used by the listener. Note: <ul style="list-style-type: none">• 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.
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 50.

Parameter	Type	Description
sni_match_algo	String	Specifies how wildcard domain name matches with the SNI certificates used by the listener. Value options: <ul style="list-style-type: none">• longest_suffix: indicates longest suffix match.• wildcard (default): indicates wildcard match.
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. Note:
security_policy_id	String	Specifies the ID of the custom security policy. Note:
enable_member_retry	Boolean	Specifies whether to enable health check retries for backend servers. Value options: <ul style="list-style-type: none">• true (default): Health check retries will be enabled.• false: Health check retries will be disabled. Note: <ul style="list-style-type: none">• If a shared load balancer is associated, this parameter is available only when protocol is set to HTTP or TERMINATED_HTTPS.• If a dedicated load balancer is associated, this parameter is available only when protocol is set to HTTP, HTTPS, or QUIC.

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> <p>Value ranges:</p> <ul style="list-style-type: none">• For TCP listeners, the value ranges from 10 to 4000, and the default value is 300.• For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0 to 4000, and the default value is 60. <p>Note: This parameter is not supported by UDP listeners of shared load balancers.</p>
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>

Parameter	Type	Description
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>Value options:</p> <ul style="list-style-type: none"> • TCP or UDP listeners of shared load balancers: The value can be true or false, and the default value is false if this parameter is not passed. • HTTP or HTTPS listeners of shared load balancers: The value can only be true, and the default value is true if this parameter is not passed. • All listeners of dedicated load balancers: The value can only be true, and the default value is true if this parameter is not passed. <p>Note:</p> <ul style="list-style-type: none"> • This function can only be enabled or disabled for TCP or UDP listeners of shared load balancers. • If this function is enabled, the load balancer communicates with backend servers using their real IP addresses. Ensure that security group rules and access control policies are correctly configured. • If this function is enabled, a server cannot serve as both a backend server and a client. • If this function is enabled, backend server specifications cannot be changed.

Parameter	Type	Description
proxy_protocol_enable	Boolean	<p>Specifies whether to enable the ProxyProtocol option to pass the source IP addresses of the clients to backend servers.</p> <p>Note: This parameter is available only for TLS listeners and does not take effect for other types of listeners.</p>
enhance_l7policy_enable	Boolean	<p>Specifies whether to enable advanced forwarding. If advanced forwarding is enabled, more flexible forwarding policies and rules are supported.</p> <p>Value options:</p> <ul style="list-style-type: none"> • true: Enable advanced forwarding. • false (default): Disable advanced forwarding. <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. • 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 of the forwarding rule supports wildcard asterisks (*). • Parameter conditions can be specified for forwarding rules. <p>Note:</p> <ul style="list-style-type: none"> • Advanced forwarding cannot be disabled once it is enabled. • If advanced forwarding is enabled, forwarding policy priorities are defined by priority. For details, see the description of the priority field in the forwarding policy.

Parameter	Type	Description
quic_config	ListenerQuicConfig object	<p>Specifies the QUIC configuration for the current listener.</p> <p>Note:</p> <ul style="list-style-type: none"> This parameter is valid only when protocol is set to HTTPS. For a TCP, UDP, HTTP, or QUIC listener, if this parameter is not left blank, an error will be reported. The client sends a normal HTTP request that contains information indicating that the QUIC protocol is supported. If QUIC upgrade is enabled for the listeners, QUIC port and version information will be added to the response header. 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.
cps	Integer	<p>Specifies the maximum number of new connections that a listener can handle per second.</p> <p>Value range: 0 to 1000000</p> <p>Default value: 0, indicating that the number is not limited.</p> <p>Note: If the value is greater than the number defined in the load balancer specifications, the latter is used as the limit.</p>
connection	Integer	<p>Specifies the maximum number of concurrent connections that a listener can handle per second.</p> <p>Value range: 0 to 1000000</p> <p>Default value: 0, indicating that the number is not limited.</p> <p>Note: If the value is greater than the number defined in the load balancer specifications, the latter is used as the limit.</p>

Parameter	Type	Description
nat64_enable	Boolean	<p>Specifies whether to enable nat64_enable. This function enables a client to access IPv4 or IPv6 backend servers by accessing the IPv4 or IPv6 address of a load balancer.</p> <p>Constraints:</p> <p>This option can only be enabled for TCP and UDP listeners. nat64_enable is mutually exclusive with transparent_client_ip_enable.</p> <p>Value options:</p> <p>true: Enable nat64_enable.</p> <p>false: Disable nat64_enable.</p> <p>Default value: false</p>

Table 4-201 ListenerInsertHeaders

Parameter	Type	Description
X-Forwarded-ELB-IP	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>
X-Forwarded-Port	Boolean	<p>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.</p>
X-Forwarded-For-Port	Boolean	<p>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.</p>
X-Forwarded-Host	Boolean	<p>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.</p>

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 4-202 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-203 Tag

Parameter	Type	Description
key	String	Specifies the tag key.
value	String	Specifies the tag value.

Table 4-204 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. Note: The specified IP address group must exist, and the value cannot be null .
enable_ipgroup	Boolean	Specifies whether access control is enabled. Value options: <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. Value options: <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 4-205 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 listener specified by 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 .

Parameter	Type	Description
enable_quic_upgrade	Boolean	Specifies whether to enable QUIC upgrade. Value options: <ul style="list-style-type: none">• true: QUIC upgrade is enabled.• false: QUIC upgrade is disabled. HTTPS listeners can be upgraded to QUIC listeners.

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-1-2",
    "tags": [ ],
    "created_at": "2019-04-02T00:12:32Z",
    "updated_at": "2019-04-02T17:43:46Z",
    "http2_enable": true,
    "insert_headers": {
      "X-Forwarded-ELB-IP": true
    },
    "transparent_client_ip_enable": false,
    "quic_config": null,
    "nat64_enable": false
  }, {
    "id": "0b455839-3ea7-4bac-ad26-35bf22f96ea4",
    "name": "listener-test",
    "protocol_port": 86,
    "protocol": "TERMINATED_HTTPS",
```

```
"description" : null,
"default_tls_container_ref" : "ad9b123e858d4652b80e89b9941e49a4",
"admin_state_up" : true,
"loadbalancers" : [ {
  "id" : "309a0f61-0b62-45f2-97d1-742f3434338e"
} ],
"member_timeout" : 60,
"client_timeout" : 60,
"keepalive_timeout" : 15,
"client_ca_tls_container_ref" : "7875ccb4c6b44cdb90ab2ab89892ab71",
"project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
"sni_container_refs" : [ "7f41c96223d34ebaa3c8e836b6625ec0" ],
"connection_limit" : -1,
"default_pool_id" : "5e7e0175-d5d5-4f37-bfba-88a9524ad20b",
"tls_ciphers_policy" : "tls-1-2",
"tags" : [ ],
"created_at" : "2019-03-22T23:37:14Z",
"updated_at" : "2019-03-22T23:37:14Z",
"http2_enable" : false,
"ipgroup" : null,
"insert_headers" : {
  "X-Forwarded-ELB-IP" : true
},
"transparent_client_ip_enable" : false,
"quic_config" : null,
"nat64_enable" : false
} ],
"page_info" : {
  "next_marker" : "0b455839-3ea7-4bac-ad26-35bf22f96ea4",
  "previous_marker" : "0b11747a-b139-492f-9692-2df0b1c87193",
  "current_count" : 2
},
"request_id" : "774640ee-6863-4de3-8156-aff16f51a087"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.8.3 Viewing the Details of a Listener

Function

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

Calling Method

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

URI

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

Table 4-206 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 4-207 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 4-208 Response body parameters

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

Table 4-209 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. Note: 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. -1 indicates that the number of connections is not limited. Default value: -1 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 load balancer. Request forwarding using HTTP/2 improves the access performance between your application and the load balancer. However, the load balancer still uses HTTP/1.x to forward requests to the backend server. Note: <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.• For QUIC listeners, it cannot be set and the response is fixed at true.
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.
enterprise_project_id	String	Specifies the ID of the enterprise project.
protocol	String	Specifies the protocol used by the listener. The value can be TCP , UDP , HTTP , HTTPS , TERMINATED_HTTPS , QUIC , or TLS . Note: <ul style="list-style-type: none"> Protocol used by HTTPS listeners added to a shared load balancer can only be set to TERMINATED_HTTPS. If HTTPS is passed, the value will be automatically changed to TERMINATED_HTTPS. Protocol used by HTTPS listeners added to a dedicated load balancer can only be set to HTTPS. If TERMINATED_HTTPS is passed, the value will be automatically changed to HTTPS.
protocol_port	Integer	Specifies the port used by the listener. Note: <ul style="list-style-type: none"> 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.

Parameter	Type	Description
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 50.
sni_match_algo	String	Specifies how wildcard domain name matches with the SNI certificates used by the listener. Value options: <ul style="list-style-type: none">• longest_suffix: indicates longest suffix match.• wildcard (default): indicates wildcard match.
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. Note:
security_policy_id	String	Specifies the ID of the custom security policy. Note:

Parameter	Type	Description
enable_member_retry	Boolean	<p>Specifies whether to enable health check retries for backend servers.</p> <p>Value options:</p> <ul style="list-style-type: none"> • true (default): Health check retries will be enabled. • false: Health check retries will be disabled. <p>Note:</p> <ul style="list-style-type: none"> • If a shared load balancer is associated, this parameter is available only when protocol is set to HTTP or TERMINATED_HTTPS. • If a dedicated load balancer is associated, this parameter is available only when protocol is set to HTTP, HTTPS, or QUIC.
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> <p>Value ranges:</p> <ul style="list-style-type: none"> • For TCP listeners, the value ranges from 10 to 4000, and the default value is 300. • For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0 to 4000, and the default value is 60. <p>Note: This parameter is not supported by UDP listeners of shared load balancers.</p>

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	Specifies the IP address group associated with the listener.

Parameter	Type	Description
transparent_client_ip_enable	Boolean	<p>Specifies whether to pass source IP addresses of the clients to backend servers.</p> <p>Value options:</p> <ul style="list-style-type: none">• TCP or UDP listeners of shared load balancers: The value can be true or false, and the default value is false if this parameter is not passed.• HTTP or HTTPS listeners of shared load balancers: The value can only be true, and the default value is true if this parameter is not passed.• All listeners of dedicated load balancers: The value can only be true, and the default value is true if this parameter is not passed. <p>Note:</p> <ul style="list-style-type: none">• This function can only be enabled or disabled for TCP or UDP listeners of shared load balancers.• If this function is enabled, the load balancer communicates with backend servers using their real IP addresses. Ensure that security group rules and access control policies are correctly configured.• If this function is enabled, a server cannot serve as both a backend server and a client.• If this function is enabled, backend server specifications cannot be changed.
proxy_protocol_enable	Boolean	<p>Specifies whether to enable the ProxyProtocol option to pass the source IP addresses of the clients to backend servers.</p> <p>Note: 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. If advanced forwarding is enabled, more flexible forwarding policies and rules are supported.</p> <p>Value options:</p> <ul style="list-style-type: none"> • true: Enable advanced forwarding. • false (default): Disable advanced forwarding. <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. • 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 of the forwarding rule supports wildcard asterisks (*). • Parameter conditions can be specified for forwarding rules. <p>Note:</p> <ul style="list-style-type: none"> • Advanced forwarding cannot be disabled once it is enabled. • If advanced forwarding is enabled, forwarding policy priorities are defined by priority. For details, see the description of the priority field in the forwarding policy.

Parameter	Type	Description
quic_config	ListenerQuicConfig object	<p>Specifies the QUIC configuration for the current listener.</p> <p>Note:</p> <ul style="list-style-type: none"> This parameter is valid only when protocol is set to HTTPS. For a TCP, UDP, HTTP, or QUIC listener, if this parameter is not left blank, an error will be reported. The client sends a normal HTTP request that contains information indicating that the QUIC protocol is supported. If QUIC upgrade is enabled for the listeners, QUIC port and version information will be added to the response header. 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.
cps	Integer	<p>Specifies the maximum number of new connections that a listener can handle per second.</p> <p>Value range: 0 to 1000000</p> <p>Default value: 0, indicating that the number is not limited.</p> <p>Note: If the value is greater than the number defined in the load balancer specifications, the latter is used as the limit.</p>
connection	Integer	<p>Specifies the maximum number of concurrent connections that a listener can handle per second.</p> <p>Value range: 0 to 1000000</p> <p>Default value: 0, indicating that the number is not limited.</p> <p>Note: If the value is greater than the number defined in the load balancer specifications, the latter is used as the limit.</p>

Parameter	Type	Description
nat64_enable	Boolean	<p>Specifies whether to enable nat64_enable. This function enables a client to access IPv4 or IPv6 backend servers by accessing the IPv4 or IPv6 address of a load balancer.</p> <p>Constraints:</p> <p>This option can only be enabled for TCP and UDP listeners. nat64_enable is mutually exclusive with transparent_client_ip_enable.</p> <p>Value options:</p> <p>true: Enable nat64_enable.</p> <p>false: Disable nat64_enable.</p> <p>Default value: false</p>

Table 4-210 ListenerInsertHeaders

Parameter	Type	Description
X-Forwarded-ELB-IP	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>
X-Forwarded-Port	Boolean	<p>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.</p>
X-Forwarded-For-Port	Boolean	<p>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.</p>
X-Forwarded-Host	Boolean	<p>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.</p>

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 4-211 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-212 Tag

Parameter	Type	Description
key	String	Specifies the tag key.
value	String	Specifies the tag value.

Table 4-213 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. Note: The specified IP address group must exist, and the value cannot be null .
enable_ipgroup	Boolean	Specifies whether access control is enabled. Value options: <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. Value options: <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 4-214 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 listener specified by 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 .

Parameter	Type	Description
enable_quic_upgrade	Boolean	Specifies whether to enable QUIC upgrade. Value options: <ul style="list-style-type: none">• true: QUIC upgrade is enabled.• false: QUIC upgrade is disabled. HTTPS listeners can be upgraded to QUIC listeners.

Example Requests

Viewing the details of a listener

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

Example Responses

Status code: 200

Successful request.

```
{
  "listener" : {
    "id" : "0b11747a-b139-492f-9692-2df0b1c87193",
    "name" : "My listener",
    "protocol_port" : 80,
    "protocol" : "TCP",
    "ipgroup" : null,
    "description" : "My listener update.",
    "default_tls_container_ref" : null,
    "admin_state_up" : true,
    "loadbalancers" : [ {
      "id" : "098b2f68-af1c-41a9-8efd-69958722af62"
    } ],
    "member_timeout" : null,
    "client_timeout" : null,
    "keepalive_timeout" : 300,
    "client_ca_tls_container_ref" : null,
    "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
    "sni_container_refs" : [ ],
    "connection_limit" : -1,
    "default_pool_id" : null,
    "tls_ciphers_policy" : "tls-1-0",
    "tags" : [ ],
    "created_at" : "2019-04-02T00:12:32Z",
    "updated_at" : "2019-04-02T17:43:46Z",
    "http2_enable" : true,
    "insert_headers" : {
      "X-Forwarded-ELB-IP" : true
    },
    "transparent_client_ip_enable" : false,
    "nat64_enable" : false
  },
  "request_id" : "1394eb39-e4c8-4177-b96d-aaff569f1833"
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.8.4 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 4-215 Path Parameters

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

Request Parameters

Table 4-216 Request header parameters

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

Table 4-217 Request body parameters

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

Table 4-218 UpdateListenerOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the listener. The value can only be updated to true .
client_ca_tls_container_ref	No	String	Specifies the ID of the CA certificate used by the listener. Note: <ul style="list-style-type: none">This parameter is available only when type is set to client.This parameter is not available if the listener protocol is QUIC.
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.
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.

Parameter	Mandatory	Type	Description
http2_enable	No	Boolean	<p>Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the load balancer. Request forwarding using HTTP/2 improves the access performance between your application and the load balancer. However, the load balancer still uses HTTP/1.x to forward requests to the backend server.</p> <p>Note:</p> <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. • For QUIC listeners, it cannot be set and the response is fixed at true.
insert_headers	No	ListenerInsertHeaders object	<p>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.</p>
name	No	String	<p>Specifies the listener name.</p> <p>Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details.</p>

Parameter	Mandatory	Type	Description
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 50.
sni_match_algo	No	String	Specifies how wildcard domain name matches with the SNI certificates used by the listener. Value options: <ul style="list-style-type: none">• longest_suffix: indicates longest suffix match.• wildcard (default): indicates wildcard match.
tls_ciphers_policy	No	String	Specifies the security policy used by the listener. Note:
security_policy_id	No	String	Specifies the ID of the custom security policy. Note:

Parameter	Mandatory	Type	Description
enable_member_retry	No	Boolean	<p>Specifies whether to enable health check retries for backend servers.</p> <p>Value options:</p> <ul style="list-style-type: none">• true (default): Health check retries will be enabled.• false: Health check retries will be disabled. <p>Note:</p> <ul style="list-style-type: none">• If a shared load balancer is associated, this parameter is available only when protocol is set to HTTP or TERMINATED_HTTPS.• If a dedicated load balancer is associated, this parameter is available only when protocol is set to HTTP, HTTPS, or QUIC.
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>
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, and the default value is 60.</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> <p>Value ranges:</p> <ul style="list-style-type: none"> • For TCP listeners, the value ranges from 10 to 4000. • For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0 to 4000. <p>Default value: 60</p> <p>Note: This parameter is not supported by UDP listeners of shared load balancers.</p>
ipgroup	No	UpdateListenerIpGroupOption object	Specifies the IP address group associated with the listener.

Parameter	Mandatory	Type	Description
transparent_client_ip_enable	No	Boolean	<p>Specifies whether to pass source IP addresses of the clients to backend servers.</p> <p>Value options:</p> <ul style="list-style-type: none">• TCP or UDP listeners of shared load balancers: The value can be true or false, and the default value is false if this parameter is not passed.• HTTP or HTTPS listeners of shared load balancers: The value can only be true, and the default value is true if this parameter is not passed.• All listeners of dedicated load balancers: The value can only be true, and the default value is true if this parameter is not passed. <p>Note:</p> <ul style="list-style-type: none">• This function can only be enabled or disabled for TCP or UDP listeners of shared load balancers.• If this function is enabled, the load balancer communicates with backend servers using their real IP addresses. Ensure that security group rules and access control policies are correctly configured.• If this function is enabled, a server cannot serve as both a backend server and a client.• If this function is enabled, backend server specifications cannot be changed.

Parameter	Mandatory	Type	Description
proxy_protocol_enable	No	Boolean	Specifies whether to enable the ProxyProtocol option to pass the source IP addresses of the clients to backend servers. Note: 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.</p> <p>Value options:</p> <ul style="list-style-type: none"> ● true: Enable advanced forwarding. ● false: Disable advanced forwarding. <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. ● 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 of the forwarding rule supports wildcard asterisks (*). ● Parameter conditions can be specified for forwarding rules. <p>Note:</p> <ul style="list-style-type: none"> ● Advanced forwarding cannot be disabled once it is enabled. ● If advanced forwarding is enabled, forwarding policy priorities are defined by

Parameter	Mandatory	Type	Description
			priority . For details, see the description of the priority field in the forwarding policy.
quic_config	No	UpdateListenerQuicConfigOption object	Specifies the QUIC configuration for the current listener. Note: <ul style="list-style-type: none"> This parameter is valid only when protocol is set to HTTPS. For a TCP, UDP, HTTP, or QUIC listener, if this parameter is not left blank, an error will be reported. The client sends a normal HTTP request that contains information indicating that the QUIC protocol is supported. If QUIC upgrade is enabled for the listeners, QUIC port and version information will be added to the response header. 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.
cps	No	Integer	Specifies the maximum number of new connections that a listener can handle per second. Value range: 0 to 1000000 Default value: 0 , indicating that the number is not limited. Note: If the value is greater than the number defined in the load balancer specifications, the latter is used as the limit.

Parameter	Mandatory	Type	Description
connection	No	Integer	<p>Specifies the maximum number of concurrent connections that a listener can handle per second.</p> <p>Value range: 0 to 1000000</p> <p>Default value: 0, indicating that the number is not limited.</p> <p>Note: If the value is greater than the number defined in the load balancer specifications, the latter is used as the limit.</p>

Table 4-219 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>
X-Forwarded-Port	No	Boolean	<p>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.</p>
X-Forwarded-For-Port	No	Boolean	<p>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.</p>

Parameter	Mandatory	Type	Description
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.
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 4-220 UpdateListenerIpGroupOption

Parameter	Mandatory	Type	Description
ipgroup_id	No	String	<p>Specifies the ID of the IP address group associated with the listener.</p> <p>This parameter is mandatory when you create the IP address group and is optional when you update the IP address group.</p> <p>Note: The specified IP address group must exist, and the value cannot be null.</p>
enable_ipgroup	No	Boolean	<p>Specifies whether access control is enabled.</p> <p>Value options:</p> <ul style="list-style-type: none">• true: Access control is enabled.• false: Access control is disabled. <p>A listener with access control enabled can be directly deleted.</p>
type	No	String	<p>Specifies how access to the listener is controlled.</p> <p>Value options:</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 4-221 UpdateListenerQuicConfigOption

Parameter	Mandatory	Type	Description
quic_listener_id	No	String	Specifies the ID of the QUIC listener. This parameter is mandatory for creation and is optional for update. The listener specified by 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 .
enable_quic_upgrade	No	Boolean	Specifies whether to enable QUIC upgrade. Value options: <ul style="list-style-type: none">• true: QUIC upgrade is enabled.• false: QUIC upgrade is disabled. HTTPS listeners can be upgraded to QUIC listeners.

Response Parameters

Status code: 200

Table 4-222 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. Note: The value is automatically generated.
listener	Listener object	Response body for adding a listener

Table 4-223 Listener

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the listener.

Parameter	Type	Description
client_ca_tls_container_ref	String	Specifies the ID of the CA certificate used by the listener. Note: 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. -1 indicates that the number of connections is not limited. Default value: -1 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 load balancer. Request forwarding using HTTP/2 improves the access performance between your application and the load balancer. However, the load balancer still uses HTTP/1.x to forward requests to the backend server. Note: <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.For QUIC listeners, it cannot be set and the response is fixed at true.
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.
enterprise_project_id	String	Specifies the ID of the enterprise project.
protocol	String	Specifies the protocol used by the listener. The value can be TCP , UDP , HTTP , HTTPS , TERMINATED_HTTPS , QUIC , or TLS . Note: <ul style="list-style-type: none">• Protocol used by HTTPS listeners added to a shared load balancer can only be set to TERMINATED_HTTPS. If HTTPS is passed, the value will be automatically changed to TERMINATED_HTTPS.• Protocol used by HTTPS listeners added to a dedicated load balancer can only be set to HTTPS. If TERMINATED_HTTPS is passed, the value will be automatically changed to HTTPS.
protocol_port	Integer	Specifies the port used by the listener. Note: <ul style="list-style-type: none">• 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.

Parameter	Type	Description
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 50.
sni_match_algo	String	Specifies how wildcard domain name matches with the SNI certificates used by the listener. Value options: <ul style="list-style-type: none">• longest_suffix: indicates longest suffix match.• wildcard (default): indicates wildcard match.
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. Note:
security_policy_id	String	Specifies the ID of the custom security policy. Note:

Parameter	Type	Description
enable_member_retry	Boolean	<p>Specifies whether to enable health check retries for backend servers.</p> <p>Value options:</p> <ul style="list-style-type: none"> • true (default): Health check retries will be enabled. • false: Health check retries will be disabled. <p>Note:</p> <ul style="list-style-type: none"> • If a shared load balancer is associated, this parameter is available only when protocol is set to HTTP or TERMINATED_HTTPS. • If a dedicated load balancer is associated, this parameter is available only when protocol is set to HTTP, HTTPS, or QUIC.
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> <p>Value ranges:</p> <ul style="list-style-type: none"> • For TCP listeners, the value ranges from 10 to 4000, and the default value is 300. • For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 0 to 4000, and the default value is 60. <p>Note: This parameter is not supported by UDP listeners of shared load balancers.</p>

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	Specifies the IP address group associated with the listener.

Parameter	Type	Description
transparent_client_ip_enable	Boolean	<p>Specifies whether to pass source IP addresses of the clients to backend servers.</p> <p>Value options:</p> <ul style="list-style-type: none">• TCP or UDP listeners of shared load balancers: The value can be true or false, and the default value is false if this parameter is not passed.• HTTP or HTTPS listeners of shared load balancers: The value can only be true, and the default value is true if this parameter is not passed.• All listeners of dedicated load balancers: The value can only be true, and the default value is true if this parameter is not passed. <p>Note:</p> <ul style="list-style-type: none">• This function can only be enabled or disabled for TCP or UDP listeners of shared load balancers.• If this function is enabled, the load balancer communicates with backend servers using their real IP addresses. Ensure that security group rules and access control policies are correctly configured.• If this function is enabled, a server cannot serve as both a backend server and a client.• If this function is enabled, backend server specifications cannot be changed.
proxy_protocol_enable	Boolean	<p>Specifies whether to enable the ProxyProtocol option to pass the source IP addresses of the clients to backend servers.</p> <p>Note: 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. If advanced forwarding is enabled, more flexible forwarding policies and rules are supported.</p> <p>Value options:</p> <ul style="list-style-type: none"> • true: Enable advanced forwarding. • false (default): Disable advanced forwarding. <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. • 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 of the forwarding rule supports wildcard asterisks (*). • Parameter conditions can be specified for forwarding rules. <p>Note:</p> <ul style="list-style-type: none"> • Advanced forwarding cannot be disabled once it is enabled. • If advanced forwarding is enabled, forwarding policy priorities are defined by priority. For details, see the description of the priority field in the forwarding policy.

Parameter	Type	Description
quic_config	ListenerQuicConfig object	<p>Specifies the QUIC configuration for the current listener.</p> <p>Note:</p> <ul style="list-style-type: none"> This parameter is valid only when protocol is set to HTTPS. For a TCP, UDP, HTTP, or QUIC listener, if this parameter is not left blank, an error will be reported. The client sends a normal HTTP request that contains information indicating that the QUIC protocol is supported. If QUIC upgrade is enabled for the listeners, QUIC port and version information will be added to the response header. 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.
cps	Integer	<p>Specifies the maximum number of new connections that a listener can handle per second.</p> <p>Value range: 0 to 1000000</p> <p>Default value: 0, indicating that the number is not limited.</p> <p>Note: If the value is greater than the number defined in the load balancer specifications, the latter is used as the limit.</p>
connection	Integer	<p>Specifies the maximum number of concurrent connections that a listener can handle per second.</p> <p>Value range: 0 to 1000000</p> <p>Default value: 0, indicating that the number is not limited.</p> <p>Note: If the value is greater than the number defined in the load balancer specifications, the latter is used as the limit.</p>

Parameter	Type	Description
nat64_enable	Boolean	<p>Specifies whether to enable nat64_enable. This function enables a client to access IPv4 or IPv6 backend servers by accessing the IPv4 or IPv6 address of a load balancer.</p> <p>Constraints:</p> <p>This option can only be enabled for TCP and UDP listeners. nat64_enable is mutually exclusive with transparent_client_ip_enable.</p> <p>Value options:</p> <p>true: Enable nat64_enable.</p> <p>false: Disable nat64_enable.</p> <p>Default value: false</p>

Table 4-224 ListenerInsertHeaders

Parameter	Type	Description
X-Forwarded-ELB-IP	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>
X-Forwarded-Port	Boolean	<p>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.</p>
X-Forwarded-For-Port	Boolean	<p>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.</p>
X-Forwarded-Host	Boolean	<p>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.</p>

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 4-225 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-226 Tag

Parameter	Type	Description
key	String	Specifies the tag key.
value	String	Specifies the tag value.

Table 4-227 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. Note: The specified IP address group must exist, and the value cannot be null .
enable_ipgroup	Boolean	Specifies whether access control is enabled. Value options: <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. Value options: <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 4-228 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 listener specified by 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 .

Parameter	Type	Description
enable_quic_upgrade	Boolean	Specifies whether to enable QUIC upgrade. Value options: <ul style="list-style-type: none">• true: QUIC upgrade is enabled.• false: QUIC upgrade is disabled. HTTPS listeners can be upgraded to QUIC listeners.

Example Requests

Modifying the name and description of a listener and enabling the HTTP/2 option

```
PUT https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/listeners/0b11747a-b139-492f-9692-2df0b1c87193
{
  "listener" : {
    "description" : "My listener update.",
    "name" : "My listener",
    "http2_enable" : true
  }
}
```

Example Responses

Status code: 200

Successful request.

```
{
  "listener" : {
    "id" : "0b11747a-b139-492f-9692-2df0b1c87193",
    "name" : "My listener",
    "protocol_port" : 80,
    "protocol" : "TCP",
    "description" : "My listener update.",
    "default_tls_container_ref" : null,
    "admin_state_up" : true,
    "loadbalancers" : [ {
      "id" : "098b2f68-af1c-41a9-8efd-69958722af62"
    } ],
    "member_timeout" : null,
    "client_timeout" : null,
    "keepalive_timeout" : 300,
    "client_ca_tls_container_ref" : null,
    "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
    "sni_container_refs" : [ ],
    "connection_limit" : -1,
    "default_pool_id" : null,
    "tls_ciphers_policy" : "tls-1-2",
    "tags" : [ ],
    "created_at" : "2019-04-02T00:12:32Z",
    "updated_at" : "2019-04-02T17:43:46Z",
    "http2_enable" : true,
    "ipgroup" : null,
    "insert_headers" : {
      "X-Forwarded-ELB-IP" : true
    }
  }
}
```

```
"transparent_client_ip_enable" : false,  
"nat64_enable" : false  
},  
"request_id" : "5d56d89a-2271-4a75-8c02-804e3bc7b671"  
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.8.5 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 4-229 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 4-230 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](#).

4.9 Backend Server Group

4.9.1 Creating a Backend Server Group

Function

This API is used to create a backend server group.

Constraints

Note the following when you create a backend server group:

- If **session-persistence** is specified, **cookie_name** is available only when **type** is set to **APP_COOKIE**.

- If **listener_id** is specified, the listener must have no backend server group associated.

Calling Method

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

URI

POST /v3/{project_id}/elb/pools

Table 4-231 Path Parameters

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

Request Parameters

Table 4-232 Request header parameters

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

Table 4-233 Request body parameters

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

Table 4-234 CreatePoolOption

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

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>Value options:</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
listener_id	No	String	<p>Specifies the ID of the listener with which the backend server group is associated.</p> <p>Note:</p> <ul style="list-style-type: none"> ● At least one of listener_id, loadbalancer_id, or type must be specified. ● Either listener_id or loadbalancer_id must be specified for shared load balancers. listener_id and loadbalancer_id are not required for dedicated load balancers.
loadbalancer_id	No	String	<p>Specifies the ID of the load balancer with which the backend server group is associated.</p> <p>Note:</p> <ul style="list-style-type: none"> ● Specify one of listener_id, loadbalancer_id, or type, or all of them. ● Specify either listener_id or loadbalancer_id for backend server groups of shared load balancers. listener_id and loadbalancer_id are not required for backend server groups of dedicated load balancers.

Parameter	Mandatory	Type	Description
name	No	String	Specifies the backend server group name.
project_id	No	String	Specifies the project ID of the backend server group.

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, 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 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,

Parameter	Mandatory	Type	Description
			http2_enable of the listener must be set to true .
session_persistence	No	CreatePoolSessionPersistenceOption object	Specifies the sticky session.
slow_start	No	CreatePoolSlowStartOption 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. Note: This parameter can be used when the protocol of the backend server group is HTTP or HTTPS.
member_deletion_protection_enable	No	Boolean	Specifies whether to enable deletion protection. Value options: <ul style="list-style-type: none"> • true: Enable deletion protection. • false (default): Disable deletion protection. NOTE Disable deletion protection for all your resources before deleting your account.

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. • If vpc_id is not specified, vpc_id is determined by the VPC where the backend server works.
type	No	String	<p>Specifies the type of the backend server group.</p> <p>Value options:</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. <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. For backend server groups of shared load balancers, specify loadbalancer_id or listener_id.

Parameter	Mandatory	Type	Description
ip_version	No	String	Specifies the IP address version supported by the backend server group. <ul style="list-style-type: none"> Shared load balancers: The value is fixed at v4. Dedicated load balancers: The value can be dualstack or v4. If the protocol of the backend server group is TCP or UDP, the value is dualstack. If the protocol of the backend server group is HTTP, the value is v4.
quic_cid_hash_strategy	No	QuicCidHash Strategy object	Specifies multi-path forwarding configuration based on destination connection IDs.

Table 4-235 CreatePoolSessionPersistenceOption

Parameter	Mandatory	Type	Description
cookie_name	No	String	Specifies the cookie name. Note: <ul style="list-style-type: none"> This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned. Value ranges:
type	Yes	String	Specifies the sticky session type. The value can be SOURCE_IP , HTTP_COOKIE , or APP_COOKIE . Note:

Parameter	Mandatory	Type	Description
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> <p>Value ranges:</p> <ul style="list-style-type: none">• If the protocol of the backend server group is TCP or UDP, 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.

Table 4-236 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 (default): Disable slow start.
duration	No	Integer	<p>Specifies the slow start duration, in seconds.</p> <p>The value ranges from 30 to 1200, and the default value is 30.</p>

Table 4-237 QuicCidHashStrategy

Parameter	Mandatory	Type	Description
len	Yes	Integer	<p>Specifies the length of the hash factor in the connection ID, in byte. This parameter is valid only when the load balancing algorithm is QUIC_CID.</p> <p>Value range: 1 to 20 Default value: 3</p>

Parameter	Mandatory	Type	Description
offset	Yes	Integer	Specifies the start position in the connection ID as the hash factor, in byte. This parameter is valid only when the load balancing algorithm is QUIC_CID . Value range: 0 to 19 Default value: 1

Response Parameters

Status code: 201

Table 4-238 Response body parameters

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

Table 4-239 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	Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group. Value options: <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
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, 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 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.
session_persistence	SessionPersistence object	Specifies the sticky session.

Parameter	Type	Description
ip_version	String	<p>Specifies the IP address version supported by the backend server group.</p> <p>Value range:</p> <ul style="list-style-type: none"> • Shared load balancers: The value is fixed at v4. • Dedicated load balancers: The value can be dualstack or v4. If the protocol of the backend server group is TCP or UDP, the value is dualstack. If the protocol of the backend server group is HTTP, the value is v4.
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 deletion protection.</p> <p>Value options:</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>
created_at	String	<p>Specifies the time when the backend server group was created. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p> <p>This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.</p>

Parameter	Type	Description
updated_at	String	Specifies the time when the backend server group was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
vpc_id	String	Specifies the ID of the VPC where the backend server group works.
type	String	Specifies the type of the backend server group. Value options: <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 ID of the enterprise project that the IP address group belongs to.
quic_cid_hash_strategy	QuicCidHashStrategy object	Specifies multi-path forwarding policy based on destination connection IDs.

Table 4-240 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-241 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-242 MemberRef

Parameter	Type	Description
id	String	Specifies the backend server ID.

Table 4-243 SessionPersistence

Parameter	Type	Description
cookie_name	String	<p>Specifies the cookie name.</p> <p>Note:</p> <ul style="list-style-type: none">This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned. <p>Value ranges:</p> <ul style="list-style-type: none">For shared load balancers, the name can contain a maximum of 64 characters, including letters, digits, underscores (_), and hyphens (-).For dedicated load balancers, the name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
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 be HTTP_COOKIE or APP_COOKIE.If the backend server group protocol is QUIC, sticky session must be enabled with type set to SOURCE_IP.

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.

Table 4-244 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 (default): Disable slow start.
duration	Integer	<p>Specifies the slow start duration, in seconds.</p> <p>The value ranges from 30 to 1200, and the default value is 30.</p>

Table 4-245 QuicCidHashStrategy

Parameter	Type	Description
len	Integer	<p>Specifies the length of the hash factor in the connection ID, in byte. This parameter is valid only when the load balancing algorithm is QUIC_CID.</p> <p>Value range: 1 to 20 Default value: 3</p>
offset	Integer	<p>Specifies the start position in the connection ID as the hash factor, in byte. This parameter is valid only when the load balancing algorithm is QUIC_CID.</p> <p>Value range: 0 to 19 Default value: 1</p>

Example Requests

- Creating a backend server group and setting its backend protocol to TCP

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

```
{
  "pool" : {
    "name" : "My pool",
    "lb_algorithm" : "LEAST_CONNECTIONS",
    "listener_id" : "0b11747a-b139-492f-9692-2df0b1c87193",
    "protocol" : "TCP",
    "member_deletion_protection_enable" : false
  }
}
```

- Creating a backend server group and setting its backend protocol to HTTP

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

```
{
  "pool" : {
    "name" : "My pool",
    "lb_algorithm" : "LEAST_CONNECTIONS",
    "listener_id" : "0b11747a-b139-492f-9692-2df0b1c87193",
    "protocol" : "HTTP",
    "slow_start" : {
      "enable" : true,
      "duration" : 50
    },
    "member_deletion_protection_enable" : false
  }
}
```

Example Responses

Status code: 201

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](#).

4.9.2 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 4-246 Path Parameters

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

Table 4-247 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. Value range: 0–2000 Default value: 2000
page_reverse	No	Boolean	Specifies whether to use reverse query. Value options: <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 of strings	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.

Parameter	Mandatory	Type	Description
healthmonitor_id	No	Array of strings	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 of strings	Specifies the ID of the backend server group. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> .
name	No	Array of strings	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 of strings	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 of strings	Specifies the protocol used by the backend server group to receive requests from the load balancer. The value can be TCP, UDP, TLS, HTTP, HTTPS, GRPC, or QUIC . Multiple protocols can be queried in the format of <i>protocol=xxx&protocol=xxx</i> .

Parameter	Mandatory	Type	Description
lb_algorithm	No	Array of strings	<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>Value options:</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 <p>Multiple algorithms can be queried in the format of <i>lb_algorithm=xxx&lb_algorithm=xxx</i>.</p>
enterprise_project_id	No	Array of strings	<p>Specifies the ID of the enterprise project.</p> <ul style="list-style-type: none"> ● If enterprise_project_id is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The elb:poools:list permission must be assigned to the user group. ● If enterprise_project_id is specified, the value can be a specific enterprise project ID or all_granted_eps. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is all_granted_eps, resources in the enterprise projects with the elb:poools:list permission are queried. <p>Multiple values can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p>

Parameter	Mandatory	Type	Description
ip_version	No	Array of strings	Specifies the IP address version supported by the backend server group. Multiple versions can be queried in the format of <i>ip_version=xxx&ip_version=xxx</i> .
member_address	No	Array of strings	Specifies the private IP address bound to the backend server. This is a query parameter and will not be 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 of strings	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 deletion protection. Value options: <ul style="list-style-type: none">• true: Enable deletion protection.• false (default): Disable deletion protection.
listener_id	No	Array of strings	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> .

Parameter	Mandatory	Type	Description
member_instance_id	No	Array of strings	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 of strings	Specifies the ID of the VPC where the backend server group works.
type	No	Array of strings	Specifies the type of the backend server group. Value options: <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.
quic_cid_len	No	Integer	Specifies the QUIC connection ID that is used to query backend server groups. It is used only as a query condition but not as a response parameter. Multiple values can be queried in the format of <i>quic_cid_len=3&quic_cid_len=5</i> .
quic_cid_offset	No	Integer	Specifies the QUIC connection ID offset that is used to query backend server groups. It is used only as a query condition but not as a response parameter. Multiple values can be queried in the format of <i>quic_cid_offset=1&quic_cid_offset=3</i> .

Request Parameters

Table 4-248 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 4-249 Response body parameters

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

Table 4-250 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result. When page_reverse is set to true , this parameter is used together to query resources on the previous page.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

Table 4-251 Pool

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the backend server group.

Parameter	Type	Description
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	Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group. Value options: <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
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, 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 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.
session_persistence	SessionPersistence object	Specifies the sticky session.

Parameter	Type	Description
ip_version	String	<p>Specifies the IP address version supported by the backend server group.</p> <p>Value range:</p> <ul style="list-style-type: none">• Shared load balancers: The value is fixed at v4.• Dedicated load balancers: The value can be dualstack or v4. If the protocol of the backend server group is TCP or UDP, the value is dualstack. If the protocol of the backend server group is HTTP, the value is v4.
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 deletion protection.</p> <p>Value options:</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>
created_at	String	<p>Specifies the time when the backend server group was created. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p> <p>This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.</p>

Parameter	Type	Description
updated_at	String	Specifies the time when the backend server group was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
vpc_id	String	Specifies the ID of the VPC where the backend server group works.
type	String	Specifies the type of the backend server group. Value options: <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 ID of the enterprise project that the IP address group belongs to.
quic_cid_hash_strategy	QuicCidHashStrategy object	Specifies multi-path forwarding policy based on destination connection IDs.

Table 4-252 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-253 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-254 MemberRef

Parameter	Type	Description
id	String	Specifies the backend server ID.

Table 4-255 SessionPersistence

Parameter	Type	Description
cookie_name	String	<p>Specifies the cookie name.</p> <p>Note:</p> <ul style="list-style-type: none">This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned. <p>Value ranges:</p> <ul style="list-style-type: none">For shared load balancers, the name can contain a maximum of 64 characters, including letters, digits, underscores (_), and hyphens (-).For dedicated load balancers, the name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
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 be HTTP_COOKIE or APP_COOKIE.If the backend server group protocol is QUIC, sticky session must be enabled with type set to SOURCE_IP.

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.

Table 4-256 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 (default): Disable slow start.
duration	Integer	<p>Specifies the slow start duration, in seconds.</p> <p>The value ranges from 30 to 1200, and the default value is 30.</p>

Table 4-257 QuicCidHashStrategy

Parameter	Type	Description
len	Integer	<p>Specifies the length of the hash factor in the connection ID, in byte. This parameter is valid only when the load balancing algorithm is QUIC_CID.</p> <p>Value range: 1 to 20 Default value: 3</p>
offset	Integer	<p>Specifies the start position in the connection ID as the hash factor, in byte. This parameter is valid only when the load balancing algorithm is QUIC_CID.</p> <p>Value range: 0 to 19 Default value: 1</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](#).

4.9.3 Querying the Details of a Backend Server Group

Function

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

Calling Method

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

URI

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

Table 4-258 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 4-259 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 4-260 Response body parameters

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

Table 4-261 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	Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group. Value options: <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
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.

Parameter	Type	Description
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, 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 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.
session_persistence	SessionPersistence object	Specifies the sticky session.

Parameter	Type	Description
ip_version	String	<p>Specifies the IP address version supported by the backend server group.</p> <p>Value range:</p> <ul style="list-style-type: none"> • Shared load balancers: The value is fixed at v4. • Dedicated load balancers: The value can be dualstack or v4. If the protocol of the backend server group is TCP or UDP, the value is dualstack. If the protocol of the backend server group is HTTP, the value is v4.
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 deletion protection.</p> <p>Value options:</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>
created_at	String	<p>Specifies the time when the backend server group was created. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p> <p>This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.</p>

Parameter	Type	Description
updated_at	String	Specifies the time when the backend server group was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
vpc_id	String	Specifies the ID of the VPC where the backend server group works.
type	String	Specifies the type of the backend server group. Value options: <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 ID of the enterprise project that the IP address group belongs to.
quic_cid_hash_strategy	QuicCidHashStrategy object	Specifies multi-path forwarding policy based on destination connection IDs.

Table 4-262 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-263 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-264 MemberRef

Parameter	Type	Description
id	String	Specifies the backend server ID.

Table 4-265 SessionPersistence

Parameter	Type	Description
cookie_name	String	<p>Specifies the cookie name.</p> <p>Note:</p> <ul style="list-style-type: none">This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned. <p>Value ranges:</p> <ul style="list-style-type: none">For shared load balancers, the name can contain a maximum of 64 characters, including letters, digits, underscores (_), and hyphens (-).For dedicated load balancers, the name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.
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 be HTTP_COOKIE or APP_COOKIE.If the backend server group protocol is QUIC, sticky session must be enabled with type set to SOURCE_IP.

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.

Table 4-266 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 (default): Disable slow start.
duration	Integer	<p>Specifies the slow start duration, in seconds.</p> <p>The value ranges from 30 to 1200, and the default value is 30.</p>

Table 4-267 QuicCidHashStrategy

Parameter	Type	Description
len	Integer	<p>Specifies the length of the hash factor in the connection ID, in byte. This parameter is valid only when the load balancing algorithm is QUIC_CID.</p> <p>Value range: 1 to 20 Default value: 3</p>
offset	Integer	<p>Specifies the start position in the connection ID as the hash factor, in byte. This parameter is valid only when the load balancing algorithm is QUIC_CID.</p> <p>Value range: 0 to 19 Default value: 1</p>

Example Requests

Querying the details of a backend server group

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

Example Responses

Status code: 200

Successful request.

```
{
  "pool" : {
    "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](#).

4.9.4 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 4-268 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 4-269 Request header parameters

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

Table 4-270 Request body parameters

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

Table 4-271 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.
lb_algorithm	No	String	Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group. Value options: <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
name	No	String	Specifies the backend server group name.
session_persistence	No	UpdatePoolSessionPersistenceOption object	Specifies the sticky session.
slow_start	No	UpdatePoolSlowStartOption 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. Note: This parameter can be used when the protocol of the backend server group is HTTP or HTTPS.

Parameter	Mandatory	Type	Description
member_deletion_protection_enable	No	Boolean	<p>Specifies whether to enable deletion protection.</p> <p>Value options:</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>
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>
type	No	String	<p>Specifies the type of the backend server group.</p> <p>Value options:</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: This parameter can be updated only when type is left blank.</p>
quic_cid_hash_strategy	No	QuicCidHash Strategy object	<p>Specifies multi-path distribution configuration based on destination connection IDs.</p>

Table 4-272 UpdatePoolSessionPersistenceOption

Parameter	Mandatory	Type	Description
cookie_name	No	String	<p>Specifies the cookie name.</p> <p>Note:</p> <ul style="list-style-type: none"> This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned. <p>Value ranges:</p> <ul style="list-style-type: none"> For shared load balancers, the name can contain a maximum of 64 characters, including letters, digits, underscores (_), and hyphens (-). For dedicated load balancers, the name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
type	No	String	<p>Specifies the sticky session type. The value can be SOURCE_IP, HTTP_COOKIE, or APP_COOKIE. 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. For dedicated load balancers, if the protocol of the backend server group is HTTP or HTTPS, the value can only be HTTP_COOKIE. If the backend server group protocol is QUIC, sticky session must be enabled with type set to SOURCE_IP.

Parameter	Mandatory	Type	Description
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.

Table 4-273 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 (default): Disable slow start.
duration	No	Integer	<p>Specifies the slow start duration, in seconds.</p> <p>The value ranges from 30 to 1200, and the default value is 30.</p>

Table 4-274 QuicCidHashStrategy

Parameter	Mandatory	Type	Description
len	Yes	Integer	<p>Specifies the length of the hash factor in the connection ID, in byte. This parameter is valid only when the load balancing algorithm is QUIC_CID.</p> <p>Value range: 1 to 20 Default value: 3</p>

Parameter	Mandatory	Type	Description
offset	Yes	Integer	Specifies the start position in the connection ID as the hash factor, in byte. This parameter is valid only when the load balancing algorithm is QUIC_CID . Value range: 0 to 19 Default value: 1

Response Parameters

Status code: 200

Table 4-275 Response body parameters

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

Table 4-276 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	Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group. Value options: <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
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, 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 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.
session_persistence	SessionPersistence object	Specifies the sticky session.

Parameter	Type	Description
ip_version	String	<p>Specifies the IP address version supported by the backend server group.</p> <p>Value range:</p> <ul style="list-style-type: none">• Shared load balancers: The value is fixed at v4.• Dedicated load balancers: The value can be dualstack or v4. If the protocol of the backend server group is TCP or UDP, the value is dualstack. If the protocol of the backend server group is HTTP, the value is v4.
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 deletion protection.</p> <p>Value options:</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>
created_at	String	<p>Specifies the time when the backend server group was created. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p> <p>This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.</p>

Parameter	Type	Description
updated_at	String	Specifies the time when the backend server group was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
vpc_id	String	Specifies the ID of the VPC where the backend server group works.
type	String	Specifies the type of the backend server group. Value options: <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 ID of the enterprise project that the IP address group belongs to.
quic_cid_hash_strategy	QuicCidHashStrategy object	Specifies multi-path forwarding policy based on destination connection IDs.

Table 4-277 ListenerRef

Parameter	Type	Description
id	String	Specifies the listener ID.

Table 4-278 LoadBalancerRef

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Table 4-279 MemberRef

Parameter	Type	Description
id	String	Specifies the backend server ID.

Table 4-280 SessionPersistence

Parameter	Type	Description
cookie_name	String	<p>Specifies the cookie name.</p> <p>Note:</p> <ul style="list-style-type: none">This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned. <p>Value ranges:</p> <ul style="list-style-type: none">For shared load balancers, the name can contain a maximum of 64 characters, including letters, digits, underscores (_), and hyphens (-).For dedicated load balancers, the name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).
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 be HTTP_COOKIE or APP_COOKIE.If the backend server group protocol is QUIC, sticky session must be enabled with type set to SOURCE_IP.

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.

Table 4-281 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 (default): Disable slow start.
duration	Integer	<p>Specifies the slow start duration, in seconds.</p> <p>The value ranges from 30 to 1200, and the default value is 30.</p>

Table 4-282 QuicCidHashStrategy

Parameter	Type	Description
len	Integer	<p>Specifies the length of the hash factor in the connection ID, in byte. This parameter is valid only when the load balancing algorithm is QUIC_CID.</p> <p>Value range: 1 to 20 Default value: 3</p>
offset	Integer	<p>Specifies the start position in the connection ID as the hash factor, in byte. This parameter is valid only when the load balancing algorithm is QUIC_CID.</p> <p>Value range: 0 to 19 Default value: 1</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](#).

4.9.5 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 4-283 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 4-284 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](#).

4.10 Backend Server

4.10.1 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.

Calling Method

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

URI

POST /v3/{project_id}/elb/pools/{pool_id}/members

Table 4-285 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 4-286 Request header parameters

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

Table 4-287 Request body parameters

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

Table 4-288 CreateMemberOption

Parameter	Mandatory	Type	Description
address	Yes	String	Specifies the private IP address bound to the backend server. Note: <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 version can be IPv4 or IPv6. It must be in the subnet specified by subnet_cidr_id.

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 ECSs exist. If ECSs 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.
project_id	No	String	Specifies the project ID.
protocol_port	No	Integer	Specifies the port used by the backend server to receive requests. Note: <ul style="list-style-type: none">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.

Parameter	Mandatory	Type	Description
subnet_cidr_id	No	String	<p>Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides.</p> <p>neutron_subnet_id defines IPv4 subnets, and neutron_network_id defines IPv6 subnets.</p> <p>You can query parameters neutron_subnet_id and neutron_network_id in the response by calling the API GET</p> <p>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, UDP, TLS, HTTP, HTTPS, QUIC, or GRPC. • If ip_target_enable is set to false, this parameter must be specified.

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 or QUIC_CID , this parameter will not take effect.

Response Parameters

Status code: 201

Table 4-289 Response body parameters

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

Table 4-290 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 been associated with the load balancer.
name	String	Specifies the backend server name. Note: The name is not an ECS name.

Parameter	Type	Description
project_id	String	Specifies the project ID of the backend server.
admin_state_up	Boolean	<p>Specifies the administrative status of the backend server.</p> <p>The value can be true or false.</p> <p>Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether ECSs exist. If ECSs exist, the value is true. Otherwise, the value is false.</p>
subnet_cidr_id	String	<p>Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. neutron_subnet_id defines IPv4 subnets, and neutron_network_id defines IPv6 subnets.</p> <p>You can query parameters neutron_subnet_id and neutron_network_id in the response by calling the API GET</p> <p>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, UDP, TLS, HTTP, HTTPS, QUIC, or GRPC.• If ip_target_enable is set to false, this parameter must be specified.
protocol_port	Integer	<p>Specifies the port used by the backend server to receive requests.</p> <p>Note:</p> <ul style="list-style-type: none">• 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.

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 or QUIC_CID, this parameter will not take effect.</p>
address	String	<p>Specifies the private IP address bound to the backend server.</p> <p>Note:</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.
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.</p> <p>Value options:</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.

Parameter	Type	Description
status	Array of MemberStatus objects	Specifies the health status of the backend server if listener_id under status is specified. If listener_id under status is not specified, operating_status of member takes precedence.
reason	MemberHealthCheckFailedReason object	Specifies why health check fails.
created_at	String	Specifies the time when the backend server was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
updated_at	String	Specifies the time when the backend server was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
member_type	String	Specifies the type of the backend server. Value options: <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 instance associated with the backend server. If this parameter is left blank, the backend server is not a real device. It may be an IP address.

Table 4-291 MemberStatus

Parameter	Type	Description
listener_id	String	Specifies the listener ID.
operating_status	String	Specifies the health status of the backend server. Value options: <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.
reason	MemberHealthCheckFailedReason object	Specifies why health check fails.

Table 4-292 MemberHealthCheckFailedReason

Parameter	Type	Description
reason_code	String	<p>Specifies the code of the health check failures.</p> <p>Value options:</p> <ul style="list-style-type: none">• CONNECT_TIMEOUT: The connection with the backend server times out during a health check.• CONNECT_REFUSED: The load balancer rejects connections with the backend server during a health check.• CONNECT_FAILED: The load balancer fails to establish connections with the backend server during a health check.• CONNECT_INTERRUPT: The load balancer is disconnected from the backend server during a health check.• SSL_HANDSHAKE_ERROR: The SSL handshakes with the backend server fail during a health check.• RECV_RESPONSE_FAILED: The load balancer fails to receive responses from the backend server during a health check.• RECV_RESPONSE_TIMEOUT: The load balancer does not receive responses from the backend server within the timeout duration during a health check.• SEND_REQUEST_FAILED: The load balancer fails to send a health check request to the backend server during a health check.• SEND_REQUEST_TIMEOUT: The load balancer fails to send a health check request to the backend server within the timeout duration.• RESPONSE_FORMAT_ERROR: The load balancer receives invalid responses from the backend server during a health check.• RESPONSE_MISMATCH: The response code received from the

Parameter	Type	Description
		backend server is different from the preset code.
expected_response	String	<p>Specifies the expected HTTP status code.</p> <p>This parameter will take effect only when type is set to HTTP, HTTPS, or GRPC.</p> <p>The status code cannot be null if reason_code is RESPONSE_MISMATCH.</p> <p>Value ranges:</p> <ul style="list-style-type: none">• A specific status code. If type is set to GRPC, the status code ranges from 0 to 99. If type is set to other values, the status code ranges from 200 to 599. For example, the status code can be 0 or 200.• A list of status codes that are separated with commas (,), for example, 200,202 or 0,1. A maximum of five status codes are supported.• A status code range. Different ranges are separated with commas (,), for example, 200-204,300-399 or 0-5,10-12,20-30. A maximum of five ranges are supported.
healthcheck_response	String	<p>Specifies the returned HTTP status code in the response.</p> <p>This parameter will take effect only when type is set to HTTP, HTTPS, or GRPC.</p> <p>The status code cannot be null if reason_code is RESPONSE_MISMATCH.</p> <p>Value range: A specific status code. If type is set to GRPC, the status code ranges from 0 to 99. If type is set to other values, the status code ranges from 200 to 599. For example, the status code can be 0 or 200.</p>

Example Requests

- Example 1: Adding a backend server

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

```
{
  "member" : {
    "subnet_cidr_id" : "c09f620e-3492-4429-ac15-445d5dd9ca74",
    "protocol_port" : 89,
    "name" : "My member",
    "address" : "120.10.10.16"
  }
}
```

- Example 2: Adding an IP address as a backend server

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

```
{
  "member" : {
    "protocol_port" : 89,
    "name" : "My member",
    "address" : "120.10.10.16"
  }
}
```

Example Responses

Status code: 201

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](#).

4.10.2 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 4-293 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 4-294 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. Value range: 0–2000 Default value: 2000
page_reverse	No	Boolean	Specifies whether to use reverse query. Value options: <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.
name	No	Array of strings	Specifies the backend server name. Multiple names can be queried in the format of <i>name=xxx&name=xxx</i> .
weight	No	Array of integers	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> .

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 ECSs exist. If ECSs exist, the value is true . Otherwise, the value is false .
subnet_cidr_id	No	Array of strings	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 of strings	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> .
protocol_port	No	Array of integers	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 of strings	Specifies the backend server ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> .

Parameter	Mandatory	Type	Description
operating_status	No	Array of strings	<p>Specifies the health status of the backend server.</p> <p>Value options:</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. <p>Multiple operating statuses can be queried in the format of <i>operating_status=xxx&operating_status=xxx</i>.</p>
enterprise_project_id	No	Array of strings	<p>Specifies the ID of the enterprise project.</p> <ul style="list-style-type: none"> ● If enterprise_project_id is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The elb:members:list permission must be assigned to the user group. ● If enterprise_project_id is specified, the value can be a specific enterprise project ID or all_granted_eps. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is all_granted_eps, resources in the enterprise projects with the elb:members:list permission are queried. <p>Multiple values can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p>

Parameter	Mandatory	Type	Description
ip_version	No	Array of strings	Specifies the IP version supported by the backend server. The value can be v4 (IPv4) or v6 (IPv6).
member_type	No	Array of strings	Specifies the type of the backend server. Value options: <ul style="list-style-type: none"> • ip: IP as backend servers • instance: ECSs used as backend servers Multiple values can be queried in the format of <i>member_type=xxx&member_type=xxx</i> .
instance_id	No	Array of strings	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. Multiple instance IDs can be queried in the format of <i>instance_id=xxx&instance_id=xxx</i> .

Request Parameters

Table 4-295 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 4-296 Response body parameters

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

Table 4-297 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result. When page_reverse is set to true , this parameter is used together to query resources on the previous page.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

Table 4-298 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 been 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	<p>Specifies the administrative status of the backend server.</p> <p>The value can be true or false.</p> <p>Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether ECSs exist. If ECSs exist, the value is true. Otherwise, the value is false.</p>
subnet_cidr_id	String	<p>Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. neutron_subnet_id defines IPv4 subnets, and neutron_network_id defines IPv6 subnets.</p> <p>You can query parameters neutron_subnet_id and neutron_network_id in the response by calling the API GET</p> <p>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, UDP, TLS, HTTP, HTTPS, QUIC, or GRPC.• If ip_target_enable is set to false, this parameter must be specified.
protocol_port	Integer	<p>Specifies the port used by the backend server to receive requests.</p> <p>Note:</p> <ul style="list-style-type: none">• 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.

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 or QUIC_CID, this parameter will not take effect.</p>
address	String	<p>Specifies the private IP address bound to the backend server.</p> <p>Note:</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.
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.</p> <p>Value options:</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.

Parameter	Type	Description
status	Array of MemberStatus objects	Specifies the health status of the backend server if listener_id under status is specified. If listener_id under status is not specified, operating_status of member takes precedence.
reason	MemberHealthCheckFailedReason object	Specifies why health check fails.
created_at	String	Specifies the time when the backend server was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
updated_at	String	Specifies the time when the backend server was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
member_type	String	Specifies the type of the backend server. Value options: <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 instance associated with the backend server. If this parameter is left blank, the backend server is not a real device. It may be an IP address.

Table 4-299 MemberStatus

Parameter	Type	Description
listener_id	String	Specifies the listener ID.
operating_status	String	Specifies the health status of the backend server. Value options: <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.
reason	MemberHealthCheckFailedReason object	Specifies why health check fails.

Table 4-300 MemberHealthCheckFailedReason

Parameter	Type	Description
reason_code	String	<p>Specifies the code of the health check failures.</p> <p>Value options:</p> <ul style="list-style-type: none">• CONNECT_TIMEOUT: The connection with the backend server times out during a health check.• CONNECT_REFUSED: The load balancer rejects connections with the backend server during a health check.• CONNECT_FAILED: The load balancer fails to establish connections with the backend server during a health check.• CONNECT_INTERRUPT: The load balancer is disconnected from the backend server during a health check.• SSL_HANDSHAKE_ERROR: The SSL handshakes with the backend server fail during a health check.• RECV_RESPONSE_FAILED: The load balancer fails to receive responses from the backend server during a health check.• RECV_RESPONSE_TIMEOUT: The load balancer does not receive responses from the backend server within the timeout duration during a health check.• SEND_REQUEST_FAILED: The load balancer fails to send a health check request to the backend server during a health check.• SEND_REQUEST_TIMEOUT: The load balancer fails to send a health check request to the backend server within the timeout duration.• RESPONSE_FORMAT_ERROR: The load balancer receives invalid responses from the backend server during a health check.• RESPONSE_MISMATCH: The response code received from the

Parameter	Type	Description
		backend server is different from the preset code.
expected_response	String	<p>Specifies the expected HTTP status code.</p> <p>This parameter will take effect only when type is set to HTTP, HTTPS, or GRPC.</p> <p>The status code cannot be null if reason_code is RESPONSE_MISMATCH.</p> <p>Value ranges:</p> <ul style="list-style-type: none">• A specific status code. If type is set to GRPC, the status code ranges from 0 to 99. If type is set to other values, the status code ranges from 200 to 599. For example, the status code can be 0 or 200.• A list of status codes that are separated with commas (,), for example, 200,202 or 0,1. A maximum of five status codes are supported.• A status code range. Different ranges are separated with commas (,), for example, 200-204,300-399 or 0-5,10-12,20-30. A maximum of five ranges are supported.
healthcheck_response	String	<p>Specifies the returned HTTP status code in the response.</p> <p>This parameter will take effect only when type is set to HTTP, HTTPS, or GRPC.</p> <p>The status code cannot be null if reason_code is RESPONSE_MISMATCH.</p> <p>Value range: A specific status code. If type is set to GRPC, the status code ranges from 0 to 99. If type is set to other values, the status code ranges from 200 to 599. For example, the status code can be 0 or 200.</p>

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](#).

4.10.3 Viewing the Details of a Backend Server

Function

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

Calling Method

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

URI

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

Table 4-301 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 been associated with the load balancer.

Request Parameters

Table 4-302 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 4-303 Response body parameters

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

Table 4-304 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 been 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 ECSs exist. If ECSs exist, the value is true . Otherwise, the value is false .

Parameter	Type	Description
subnet_cidr_id	String	<p>Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. neutron_subnet_id defines IPv4 subnets, and neutron_network_id defines IPv6 subnets.</p> <p>You can query parameters neutron_subnet_id and neutron_network_id in the response by calling the API GET</p> <p>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, UDP, TLS, HTTP, HTTPS, QUIC, or GRPC.• If ip_target_enable is set to false, this parameter must be specified.
protocol_port	Integer	<p>Specifies the port used by the backend server to receive requests.</p> <p>Note:</p> <ul style="list-style-type: none">• 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.
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 or QUIC_CID, this parameter will not take effect.</p>

Parameter	Type	Description
address	String	Specifies the private IP address bound to the backend server. Note: <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.
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. Value options: <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 under status is specified. If listener_id under status is not specified, operating_status of member takes precedence.
reason	MemberHealthCheckFailedReason object	Specifies why health check fails.

Parameter	Type	Description
created_at	String	Specifies the time when the backend server was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
updated_at	String	Specifies the time when the backend server was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
member_type	String	Specifies the type of the backend server. Value options: <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 instance associated with the backend server. If this parameter is left blank, the backend server is not a real device. It may be an IP address.

Table 4-305 MemberStatus

Parameter	Type	Description
listener_id	String	Specifies the listener ID.

Parameter	Type	Description
operating_status	String	Specifies the health status of the backend server. Value options: <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.
reason	MemberHealthCheckFailedReason object	Specifies why health check fails.

Table 4-306 MemberHealthCheckFailedReason

Parameter	Type	Description
reason_code	String	<p>Specifies the code of the health check failures.</p> <p>Value options:</p> <ul style="list-style-type: none">• CONNECT_TIMEOUT: The connection with the backend server times out during a health check.• CONNECT_REFUSED: The load balancer rejects connections with the backend server during a health check.• CONNECT_FAILED: The load balancer fails to establish connections with the backend server during a health check.• CONNECT_INTERRUPT: The load balancer is disconnected from the backend server during a health check.• SSL_HANDSHAKE_ERROR: The SSL handshakes with the backend server fail during a health check.• RECV_RESPONSE_FAILED: The load balancer fails to receive responses from the backend server during a health check.• RECV_RESPONSE_TIMEOUT: The load balancer does not receive responses from the backend server within the timeout duration during a health check.• SEND_REQUEST_FAILED: The load balancer fails to send a health check request to the backend server during a health check.• SEND_REQUEST_TIMEOUT: The load balancer fails to send a health check request to the backend server within the timeout duration.• RESPONSE_FORMAT_ERROR: The load balancer receives invalid responses from the backend server during a health check.• RESPONSE_MISMATCH: The response code received from the

Parameter	Type	Description
		backend server is different from the preset code.
expected_response	String	<p>Specifies the expected HTTP status code.</p> <p>This parameter will take effect only when type is set to HTTP, HTTPS, or GRPC.</p> <p>The status code cannot be null if reason_code is RESPONSE_MISMATCH.</p> <p>Value ranges:</p> <ul style="list-style-type: none">• A specific status code. If type is set to GRPC, the status code ranges from 0 to 99. If type is set to other values, the status code ranges from 200 to 599. For example, the status code can be 0 or 200.• A list of status codes that are separated with commas (,), for example, 200,202 or 0,1. A maximum of five status codes are supported.• A status code range. Different ranges are separated with commas (,), for example, 200-204,300-399 or 0-5,10-12,20-30. A maximum of five ranges are supported.
healthcheck_response	String	<p>Specifies the returned HTTP status code in the response.</p> <p>This parameter will take effect only when type is set to HTTP, HTTPS, or GRPC.</p> <p>The status code cannot be null if reason_code is RESPONSE_MISMATCH.</p> <p>Value range: A specific status code. If type is set to GRPC, the status code ranges from 0 to 99. If type is set to other values, the status code ranges from 200 to 599. For example, the status code can be 0 or 200.</p>

Example Requests

Querying the details of a backend server

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/pools/36ce7086-  
a496-4666-9064-5ba0e6840c75/members/1923923e-fe8a-484f-bdbc-e11559b1f48f
```

Example Responses

Status code: 200

Successful request.

```
{  
  "member": {  
    "name": "My member",  
    "weight": 10,  
    "admin_state_up": false,  
    "subnet_cidr_id": "c09f620e-3492-4429-ac15-445d5dd9ca74",  
    "project_id": "99a3fff0d03c428eac3678da6a7d0f24",  
    "address": "120.10.10.16",  
    "protocol_port": 89,  
    "id": "1923923e-fe8a-484f-bdbc-e11559b1f48f",  
    "operating_status": "NO_MONITOR",  
    "ip_version": "v4"  
  },  
  "request_id": "45688823-45f1-40cd-9d24-e51a9574a45b"  
}
```

Status Codes

Status Code	Description
200	Successful request.

Error Codes

See [Error Codes](#).

4.10.4 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 4-307 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 been associated with the load balancer.
pool_id	Yes	String	Specifies the ID of the backend server group.
project_id	Yes	String	Specifies the project ID.

Request Parameters

Table 4-308 Request header parameters

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

Table 4-309 Request body parameters

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

Table 4-310 UpdateMemberOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	<p>Specifies the administrative status of the backend server. The value can be true or false.</p> <p>Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether ECSs exist. If ECSs exist, the value is true. Otherwise, the value is false.</p> <p>Please do not specify this parameter.</p>
name	No	String	Specifies the backend server name.
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 or QUIC_CID, this parameter will not take effect.</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>

Response Parameters

Status code: 200

Table 4-311 Response body parameters

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

Table 4-312 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 been 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 ECSs exist. If ECSs exist, the value is true . Otherwise, the value is false .

Parameter	Type	Description
subnet_cidr_id	String	<p>Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. neutron_subnet_id defines IPv4 subnets, and neutron_network_id defines IPv6 subnets.</p> <p>You can query parameters neutron_subnet_id and neutron_network_id in the response by calling the API GET</p> <p>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, UDP, TLS, HTTP, HTTPS, QUIC, or GRPC.• If ip_target_enable is set to false, this parameter must be specified.
protocol_port	Integer	<p>Specifies the port used by the backend server to receive requests.</p> <p>Note:</p> <ul style="list-style-type: none">• 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.
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 or QUIC_CID, this parameter will not take effect.</p>

Parameter	Type	Description
address	String	Specifies the private IP address bound to the backend server. Note: <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.
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. Value options: <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 under status is specified. If listener_id under status is not specified, operating_status of member takes precedence.
reason	MemberHealthCheckFailedReason object	Specifies why health check fails.

Parameter	Type	Description
created_at	String	Specifies the time when the backend server was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
updated_at	String	Specifies the time when the backend server was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
member_type	String	Specifies the type of the backend server. Value options: <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 instance associated with the backend server. If this parameter is left blank, the backend server is not a real device. It may be an IP address.

Table 4-313 MemberStatus

Parameter	Type	Description
listener_id	String	Specifies the listener ID.

Parameter	Type	Description
operating_status	String	Specifies the health status of the backend server. Value options: <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.
reason	MemberHealthCheckFailedReason object	Specifies why health check fails.

Table 4-314 MemberHealthCheckFailedReason

Parameter	Type	Description
reason_code	String	<p>Specifies the code of the health check failures.</p> <p>Value options:</p> <ul style="list-style-type: none">• CONNECT_TIMEOUT: The connection with the backend server times out during a health check.• CONNECT_REFUSED: The load balancer rejects connections with the backend server during a health check.• CONNECT_FAILED: The load balancer fails to establish connections with the backend server during a health check.• CONNECT_INTERRUPT: The load balancer is disconnected from the backend server during a health check.• SSL_HANDSHAKE_ERROR: The SSL handshakes with the backend server fail during a health check.• RECV_RESPONSE_FAILED: The load balancer fails to receive responses from the backend server during a health check.• RECV_RESPONSE_TIMEOUT: The load balancer does not receive responses from the backend server within the timeout duration during a health check.• SEND_REQUEST_FAILED: The load balancer fails to send a health check request to the backend server during a health check.• SEND_REQUEST_TIMEOUT: The load balancer fails to send a health check request to the backend server within the timeout duration.• RESPONSE_FORMAT_ERROR: The load balancer receives invalid responses from the backend server during a health check.• RESPONSE_MISMATCH: The response code received from the

Parameter	Type	Description
		backend server is different from the preset code.
expected_response	String	<p>Specifies the expected HTTP status code.</p> <p>This parameter will take effect only when type is set to HTTP, HTTPS, or GRPC.</p> <p>The status code cannot be null if reason_code is RESPONSE_MISMATCH.</p> <p>Value ranges:</p> <ul style="list-style-type: none"> • A specific status code. If type is set to GRPC, the status code ranges from 0 to 99. If type is set to other values, the status code ranges from 200 to 599. For example, the status code can be 0 or 200. • A list of status codes that are separated with commas (,), for example, 200,202 or 0,1. A maximum of five status codes are supported. • A status code range. Different ranges are separated with commas (,), for example, 200-204,300-399 or 0-5,10-12,20-30. A maximum of five ranges are supported.
healthcheck_response	String	<p>Specifies the returned HTTP status code in the response.</p> <p>This parameter will take effect only when type is set to HTTP, HTTPS, or GRPC.</p> <p>The status code cannot be null if reason_code is RESPONSE_MISMATCH.</p> <p>Value range: A specific status code. If type is set to GRPC, the status code ranges from 0 to 99. If type is set to other values, the status code ranges from 200 to 599. For example, the status code can be 0 or 200.</p>

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](#).

4.10.5 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 4-315 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 been associated with the load balancer. You can obtain the server ID by calling the API for querying the backend servers.

Request Parameters

Table 4-316 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](#).

4.11 Health Check

4.11.1 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 4-317 Path Parameters

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

Request Parameters

Table 4-318 Request header parameters

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

Table 4-319 Request body parameters

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

Table 4-320 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 or HTTPS .

Parameter	Mandatory	Type	Description
expected_codes	No	String	<p>Specifies the expected HTTP status code.</p> <p>Value options:</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>This parameter will take effect only when type is set to HTTP, HTTPS or GRPC.</p>
http_method	No	String	<p>Specifies the HTTP method. The value can be GET, HEAD, or POST. The default value is GET.</p> <p>This parameter is available when type is set to HTTP or HTTPS.</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>
max_retries_down	No	Integer	<p>Specifies the number of consecutive health checks when the health check result of a backend server changes from ONLINE to OFFLINE.</p> <p>The value ranges from 1 to 10, and the default value is 3.</p>

Parameter	Mandatory	Type	Description
monitor_port	No	Integer	Specifies the port used for the health check. Note: <ul style="list-style-type: none">This parameter is required if any_port_enable is set to true for the backend server group. Value range: 1 to 65535 , or null (the port of a backend server will be used by default) Default value: null
name	No	String	Specifies the health check name.
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.
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 .

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.

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: _~!()*[]@\$^!'+.</p> <p>Note: This parameter is available only when type is set to HTTP or HTTPS.</p>

Response Parameters

Status code: 201

Table 4-321 Response body parameters

Parameter	Type	Description
request_id	String	<p>Specifies the request ID.</p> <p>Note: The value is automatically generated.</p>
healthmonitor	HealthMonitor object	Specifies the health check.

Table 4-322 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.
delay	Integer	Specifies the interval between health checks, in seconds. The value ranges from 1 to 50 .

Parameter	Type	Description
domain_name	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 is left blank by default, 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 or HTTPS.</p>
expected_codes	String	<p>Specifies the expected HTTP status code.</p> <p>Value options:</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>This parameter will take effect only when type is set to HTTP, HTTPS or GRPC.</p>
http_method	String	<p>Specifies the HTTP method. The value can be GET, HEAD, or POST. The default value is GET.</p> <p>This parameter is available when type is set to HTTP or HTTPS.</p>
id	String	<p>Specifies the health check ID.</p>
max_retries	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>

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 .
monitor_port	Integer	Specifies the port used for the health check. Value range: 1 to 65535 , or null (the port of a backend server will be used by default) Default value: null
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 .

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.
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 /.</p> <p>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 <code>yyyy-MM-dd'T'HH:mm:ss'Z'</code> (UTC time).</p>

Parameter	Type	Description
updated_at	String	Specifies the time when the health check was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).

Table 4-323 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 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](#).

4.11.2 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 4-324 Path Parameters

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

Table 4-325 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. Value range: 0–2000 Default value: 2000
page_reverse	No	Boolean	Specifies whether to use reverse query. Value options: <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 of strings	Specifies the health check ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> .
monitor_port	No	Array of integers	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 of strings	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 of strings	Specifies the health check name. Multiple names can be queried in the format of <i>name=xxx&name=xxx</i> .
delay	No	Array of integers	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 of integers	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 . 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 of integers	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 of strings	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 of strings	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 of strings	<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 or HTTPS.</p> <p>Multiple paths can be queried in the format of <i>url_path=xxx&url_path=xxx</i>.</p>
http_method	No	Array of strings	<p>Specifies the HTTP method. The value can be GET, HEAD, or POST.</p> <p>Multiple methods can be queried in the format of <i>http_method=xxx&http_method=xxx</i>.</p>
enterprise_project_id	No	Array of strings	<p>Specifies the ID of the enterprise project.</p> <ul style="list-style-type: none"> • If enterprise_project_id is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The elb:healthmonitors:list permission must be assigned to the user group. • If enterprise_project_id is specified, the value can be a specific enterprise project ID or all_granted_eps. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is all_granted_eps, resources in the enterprise projects with the elb:healthmonitors:list permission are queried. <p>Multiple values can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p>

Request Parameters

Table 4-326 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 4-327 Response body parameters

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

Table 4-328 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result. When page_reverse is set to true , this parameter is used together to query resources on the previous page.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

Table 4-329 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 .
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 or HTTPS .
expected_codes	String	Specifies the expected HTTP status code. Value options: <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 . This parameter will take effect only when type is set to HTTP , HTTPS or GRPC .
http_method	String	Specifies the HTTP method. The value can be GET , HEAD , or POST . The default value is GET . This parameter is available when type is set to HTTP or HTTPS .
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 .
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 .
monitor_port	Integer	Specifies the port used for the health check. Value range: 1 to 65535 , or null (the port of a backend server will be used by default) Default value: null
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 .

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.
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 /.</p> <p>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 <code>yyyy-MM-dd'T'HH:mm:ss'Z'</code> (UTC time).</p>

Parameter	Type	Description
updated_at	String	Specifies the time when the health check was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).

Table 4-330 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](#).

4.11.3 Viewing the Details of a Health Check

Function

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

Calling Method

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

URI

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

Table 4-331 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 4-332 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 4-333** Response body parameters

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

Table 4-334 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 .

Parameter	Type	Description
domain_name	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 is left blank by default, 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 or HTTPS.</p>
expected_codes	String	<p>Specifies the expected HTTP status code.</p> <p>Value options:</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>This parameter will take effect only when type is set to HTTP, HTTPS or GRPC.</p>
http_method	String	<p>Specifies the HTTP method. The value can be GET, HEAD, or POST. The default value is GET.</p> <p>This parameter is available when type is set to HTTP or HTTPS.</p>
id	String	<p>Specifies the health check ID.</p>
max_retries	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>

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 .
monitor_port	Integer	Specifies the port used for the health check. Value range: 1 to 65535 , or null (the port of a backend server will be used by default) Default value: null
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 .

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.
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 /.</p> <p>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 <code>yyyy-MM-dd'T'HH:mm:ss'Z'</code> (UTC time).</p>

Parameter	Type	Description
updated_at	String	Specifies the time when the health check was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).

Table 4-335 PoolRef

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

Example Requests

Querying the details of a health check

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

Example Responses

Status code: 200

Successful request.

```
{
  "healthmonitor" : {
    "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](#).

4.11.4 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 4-336 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 4-337 Request header parameters

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

Table 4-338 Request body parameters

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

Table 4-339 UpdateHealthMonitorOption

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	No	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 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. This parameter is available only when type is set to HTTP or HTTPS .
expected_codes	No	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

Parameter	Mandatory	Type	Description
http_method	No	String	Specifies the HTTP method. The value can be GET , HEAD , or POST . The default value is GET . This parameter is available when type is set to HTTP or HTTPS .
max_retries	No	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 .
max_retries_d own	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 .
monitor_port	No	Integer	Specifies the port used for the health check. Value range: 1 to 65535 , or null (the port of a backend server will be used by default)
name	No	String	Specifies the health check name.
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 .

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: _~!()*[]@\$^!'+.</p> <p>Note: This parameter is available only when type is set to HTTP or HTTPS.</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.

Response Parameters

Status code: 200

Table 4-340 Response body parameters

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

Table 4-341 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 .
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 or HTTPS .

Parameter	Type	Description
expected_codes	String	<p>Specifies the expected HTTP status code.</p> <p>Value options:</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>This parameter will take effect only when type is set to HTTP, HTTPS or GRPC.</p>
http_method	String	<p>Specifies the HTTP method. The value can be GET, HEAD, or POST. The default value is GET.</p> <p>This parameter is available when type is set to HTTP or HTTPS.</p>
id	String	<p>Specifies the health check ID.</p>
max_retries	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>
max_retries_down	Integer	<p>Specifies the number of consecutive health checks when the health check result of a backend server changes from ONLINE to OFFLINE.</p> <p>The value ranges from 1 to 10, and the default value is 3.</p>
monitor_port	Integer	<p>Specifies the port used for the health check.</p> <p>Value range: 1 to 65535, or null (the port of a backend server will be used by default)</p> <p>Default value: null</p>
name	String	<p>Specifies the health check name.</p>

Parameter	Type	Description
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 .
type	String	Specifies the health check protocol. The value can be TCP , UDP_CONNECT , HTTP , HTTPS , GRPC , or TLS . Note: <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.

Parameter	Type	Description
url_path	String	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> Note: This parameter is available only when type is set to HTTP or HTTPS .
created_at	String	Specifies the time when the health check was configured. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).
updated_at	String	Specifies the time when the health check was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).

Table 4-342 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.

Error Codes

See [Error Codes](#).

4.11.5 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 4-343 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 4-344 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](#).

4.12 Forwarding Policy

4.12.1 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 4-345 Path Parameters

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

Request Parameters

Table 4-346 Request header parameters

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

Table 4-347 Request body parameters

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

Table 4-348 CreateL7PolicyOption

Parameter	Mandatory	Type	Description
action	Yes	String	<p>Specifies where requests will be forwarded.</p> <p>Value options:</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>Note:</p> <ul style="list-style-type: none"> • 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. • 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	No	Boolean	<p>Specifies the administrative status of the forwarding policy.</p> <p>Note: The value can only be true.</p>
description	No	String	<p>Provides supplementary information about the forwarding policy.</p>

Parameter	Mandatory	Type	Description
listener_id	Yes	String	Specifies the ID of the listener to which the forwarding policy is added. Note: <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.
position	No	Integer	Specifies the forwarding policy priority. The value cannot be updated. This parameter is unsupported. Please do not use it.

Parameter	Mandatory	Type	Description
priority	No	Integer	<p>Specifies the forwarding policy priority. A smaller value indicates a higher priority.</p> <p>Value ranges:</p> <ul style="list-style-type: none"> • If action is set to REDIRECT_TO_LISTENER, the priority ranges from 0 to 10,000. • If action is set to other values, the priority ranges from 1 to 10,000. <p>Default value options:</p> <ul style="list-style-type: none"> • If this parameter is not passed and enhance_l7policy_enable is set to false, the priority of the new forwarding policy is 1. • If action is set to REDIRECT_TO_LISTENER, the priority of the new forwarding policy is 0. • If action is set to other values, the priority of the new forwarding policy will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. <ul style="list-style-type: none"> – If no forwarding policies exist, the priority of the new forwarding policy will be 1 by default. – If the highest priority of existing forwarding policies is the maximum value (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 value. In this case, specify a value or adjust the priorities of

Parameter	Mandatory	Type	Description
			<p>existing forwarding policies.</p> <p>Note:</p> <ul style="list-style-type: none"> The value must be unique for forwarding policies of the same listener. This parameter takes 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. 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 path is, the higher the priority is. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default. <p>This parameter is supported by forwarding policies of shared load balancers.</p>
project_id	No	String	Specifies the ID of the project where the forwarding policy is used.

Parameter	Mandatory	Type	Description
redirect_listener_id	No	String	<p>Specifies the ID of the listener to which requests are redirected.</p> <p>Note:</p> <ul style="list-style-type: none">• This parameter is mandatory when action is set to REDIRECT_TO_LISTENER.• 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.• This parameter is unsupported for shared load balancers.
redirect_pool_id	No	String	<p>Specifies the ID of the backend server group to which the requests are forwarded.</p> <p>Note:</p> <ul style="list-style-type: none">• This parameter is valid only when action is set to REDIRECT_TO_POOL.• If this parameter is specified when action is set to REDIRECT_TO_LISTENER, an error will be reported.
redirect_url	No	String	<p>Specifies the URL to which requests are forwarded.</p> <p>Format: <i>protocol://host:port/path?query</i></p>

Parameter	Mandatory	Type	Description
redirect_url_config	No	CreateRedirectUrlConfig object	<p>Specifies the URL to which requests are forwarded.</p> <p>Note:</p> <ul style="list-style-type: none"> 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. 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. For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned. 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 used. For example, \${host} indicates the host in the URL to be redirected. 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>Value format: <i>protocol://host:port/path?query</i></p>

Parameter	Mandatory	Type	Description
fixed_response_config	No	CreateFixedResponseConfig object	Specifies the configuration of the page that will be returned. Note: <ul style="list-style-type: none"> 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. For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.
redirect_pools_extend_config	No	CreateRedirectPoolsExtendConfig object	Specifies the backend server group that requests are forwarded to. Note: This parameter takes effect only when action is set to REDIRECT_TO_POOL .
rules	No	Array of CreateL7PolicyRuleOption objects	Lists the forwarding rules in the forwarding policy. Note: <ul style="list-style-type: none"> Each 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. The entire list will be replaced if you update it. If the action of l7policy is set to Redirect to another listener, rule cannot be created.

Table 4-349 CreateRedirectUrlConfig

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.
host	No	String	Specifies the name of the host 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.
port	No	String	Specifies the port that requests are redirected to. The default value is `\${port}` , indicating that the port of the request will be used.
path	No	String	Specifies the path that requests are redirected to. The value can contain only letters, digits, and special characters: <code>_~!;@^-%#&\$. *+? ,=!: \/() [] {}</code> and must start with a slash (/). <code>\$1</code> , <code>\$2</code> , <code>\$3</code> , and all the way to <code>\$9</code> match the wildcard asterisk (*) in the request URL. The default value is `\${path}` , indicating that the path of the request will be used.

Parameter	Mandatory	Type	Description
query	No	String	<p>Specifies the query string set in the URL for redirection.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters: !\$&'()*+,-./:;=?@^_`.\$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL.</p> <p>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>
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>
insert_headers_config	No	CreateInsertHeadersConfig object	Specifies the headers you want to write into the request that matches the forwarding rule.
remove_headers_config	No	CreateRemoveHeadersConfig object	Specifies the headers you want to remove from the request that matches the forwarding rule.

Table 4-350 CreateInsertHeadersConfig

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

Table 4-351 CreateInsertHeaderConfig

Parameter	Mandatory	Type	Description
key	Yes	String	<p>Specifies the key of the header you want to write into the request that matches the forwarding rule.</p> <p>The value is a string of 1 to 40 case-insensitive characters. Only letters, digits, hyphens (-), and underscores (_) are allowed.</p> <p>The key cannot be the following:</p> <p>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out.</p>
value_type	Yes	String	<p>Specifies the value type of the header.</p> <p>The value can be USER_DEFINED, REFERENCE_HEADER, or SYSTEM_DEFINED.</p>

Parameter	Mandatory	Type	Description
value	Yes	String	<p>Specifies the value of the header.</p> <p>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 4-352 CreateRemoveHeadersConfig

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

Table 4-353 CreateRemoveHeaderConfig

Parameter	Mandatory	Type	Description
key	Yes	String	<p>Specifies the key of the header you want to remove from the request that matches the forwarding rule.</p> <p>The value is a string of 1 to 40 case-insensitive characters. Only letters, digits, hyphens (-), and underscores (_) are allowed.</p> <p>The key cannot be the following:</p> <p>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out.</p>

Table 4-354 CreateFixedResponseConfig

Parameter	Mandatory	Type	Description
status_code	Yes	String	<p>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.</p>
content_type	No	String	<p>Specifies the format of the response body.</p> <p>The value can be text/plain, text/css, text/html, application/javascript, or application/json. The default value is text/plain.</p>

Parameter	Mandatory	Type	Description
message_body	No	String	Specifies the content of the response message body.

Table 4-355 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 takes effect only when action is set to REDIRECT_TO_POOL .

Table 4-356 CreateRewriteUrlConfig

Parameter	Mandatory	Type	Description
host	No	String	Specifies the domain name of the host 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.

Parameter	Mandatory	Type	Description
path	No	String	<p>Specifies the path that requests are redirected to.</p> <p>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 (/).</p> <p><code>\$1</code>, <code>\$2</code>, <code>\$3</code>, and all the way to <code>\$9</code> 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>

Parameter	Mandatory	Type	Description
query	No	String	<p>Specifies the query string set in the URL for redirection.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters: !\$&'() +, -./:;=?@^_` \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL.</p> <p>The default value is #{query}, indicating that the query string of the request will be used.</p> <p>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>

Table 4-357 CreateL7PolicyRuleOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	<p>Specifies the administrative status of the forwarding rule. The value can only be true.</p>

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Specifies the type of the forwarding rule.</p> <p>Value options:</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.● COOKIE: The cookie will be used for matching. <p>Note:</p> <p>If type is set to HOST_NAME, PATH, METHOD, or 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.</p> <p>Value options:</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.</p> <p>Value range: true or false</p> <p>Default value: 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>

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.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter will take effect only when conditions is left blank. • If type is set to HOST_NAME, the value can contain letters, digits, hyphens (-), and periods (.) and must start with a letter, digit, or *. If you want to use a wildcard domain name, enter * 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.

Parameter	Mandatory	Type	Description
conditions	No	Array of CreateRuleCondition objects	Specifies the conditions contained in a forwarding rule. Note: <ul style="list-style-type: none">• This parameter will take effect when enhance_l7policy_enable is set to true.• If conditions is specified, key and value will not take effect.• The keys in the list must be the same, whereas each value must be unique.

Table 4-358 CreateRuleCondition

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

Parameter	Mandatory	Type	Description
value	Yes	String	<p>Specifies the value of the match item.</p> <p>Note:</p> <ul style="list-style-type: none"> The key of each condition in a forwarding policy must be the same. The value of each condition in a forwarding policy must be unique. <p>Value ranges:</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, key is left blank, 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, 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

Parameter	Mandatory	Type	Description
			<p>quotation marks are not 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 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, 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, 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.

Response Parameters

Status code: 201

Table 4-359 Response body parameters

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

Table 4-360 L7Policy

Parameter	Type	Description
action	String	Specifies where requests will be forwarded. Value options: <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. Note: <ul style="list-style-type: none">• 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.• 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. Note: The value can only be true .
description	String	Provides supplementary information about the forwarding policy.
id	String	Specifies the forwarding policy ID.

Parameter	Type	Description
listener_id	String	Specifies the ID of the listener to which the forwarding policy is added.
name	String	Specifies the forwarding policy name.
position	Integer	Specifies the forwarding policy priority. This parameter cannot be updated. This parameter is unsupported. Please do not use it.

Parameter	Type	Description
priority	Integer	<p>Specifies the forwarding policy priority. A smaller value indicates a higher priority.</p> <p>Value ranges:</p> <ul style="list-style-type: none"> • If action is set to REDIRECT_TO_LISTENER, the priority ranges from 0 to 10,000. • If action is set to other values, the priority ranges from 1 to 10,000. <p>Default value options:</p> <ul style="list-style-type: none"> • If this parameter is not passed and enhance_l7policy_enable is set to false, the priority of the new forwarding policy is 1. • If action is set to REDIRECT_TO_LISTENER, the priority of the new forwarding policy is 0. • If action is set to other values, the priority of the new forwarding policy will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. <ul style="list-style-type: none"> - If no forwarding policies exist, the priority of the new forwarding policy will be 1 by default. - If the highest priority of existing forwarding policies is the maximum value (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 value. In this case, specify a value or adjust the priorities of existing forwarding policies. <p>Note:</p> <ul style="list-style-type: none"> • The value must be unique for forwarding policies of the same listener. • This parameter takes effect only when enhance_l7policy_enable is

Parameter	Type	Description
		<p>set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <ul style="list-style-type: none">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 path is, the higher the priority is. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default. <p>This parameter is supported by forwarding policies of shared load balancers.</p>
project_id	String	Specifies the project ID of the forwarding policy.
provisioning_statuses	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.ERROR: Another forwarding policy of the same listener has the same forwarding rule.
redirect_pool_id	String	<p>Specifies the ID of the backend server group to which the requests are forwarded.</p> <p>Note: This parameter is valid only when action is set to REDIRECT_TO_POOL.</p>

Parameter	Type	Description
redirect_listener_id	String	<p>Specifies the ID of the listener to which requests are redirected.</p> <p>Note:</p> <ul style="list-style-type: none"> This parameter is mandatory when action is set to REDIRECT_TO_LISTENER. 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>Note:</p> <ul style="list-style-type: none"> 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. 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. For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned. 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 used. For example, \${host} indicates the host in the URL to be redirected. 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>Value format: <i>protocol://host:port/path?query</i></p>
redirect_pools_extend_config	RedirectPoolsExtendConfig object	<p>Specifies the backend server group that requests are forwarded to.</p> <p>Note: This parameter takes effect only when action is set to REDIRECT_TO_POOL.</p>

Parameter	Type	Description
fixed_response_config	FixedResponseConfig object	Specifies the configuration of the page that will be returned. Note: <ul style="list-style-type: none">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.For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.
created_at	String	Specifies the time when the forwarding policy was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
updated_at	String	Specifies the time when the forwarding policy was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
enterprise_project_id	String	Specifies the ID of the enterprise project.

Table 4-361 RuleRef

Parameter	Type	Description
id	String	Specifies the forwarding rule ID.

Table 4-362 RedirectUrlConfig

Parameter	Type	Description
protocol	String	Specifies the protocol for redirection. The value can be HTTP , HTTPS , or `\${protocol}` . `\${protocol}` indicates that the protocol of the request will be used.
host	String	Specifies the name of the host 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.
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.
path	String	Specifies the path that requests are redirected to. The value can contain only letters, digits, and special characters: <code>_~'!@^-%#&\$.*+?,=!: \/()[]{}</code> and must start with a slash (/). <code>\$1</code> , <code>\$2</code> , <code>\$3</code> , and all the way to <code>\$9</code> match the wildcard asterisk (*) in the request URL. The default value is `\${path}` , indicating that the path of the request will be used.

Parameter	Type	Description
query	String	<p>Specifies the query string set in the URL for redirection.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters: !\$&'()*+,-./:;=?@^_`. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL.</p> <p>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>
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>

Table 4-363 RedirectPoolsExtendConfig

Parameter	Type	Description
rewrite_url_enable	Boolean	Specifies whether to set rewrite_url_enable to true .
rewrite_url_config	RewriteUrlConfig object	Specifies the URL for the backend server group that requests are forwarded to. This parameter takes effect only when action is set to REDIRECT_TO_POOL .

Table 4-364 RewriteUrlConfig

Parameter	Type	Description
host	String	<p>Specifies the domain name of the host that requests are redirected to.</p> <p>The domain name can contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</p> <p>The default value is \${host}, indicating that the host of the request will be used.</p>
path	String	<p>Specifies the path that requests are redirected to.</p> <p>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 (/).</p> <p><code>\$1</code>, <code>\$2</code>, <code>\$3</code>, and all the way to <code>\$9</code> 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>

Parameter	Type	Description
query	String	<p>Specifies the query string set in the URL for redirection.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters: <code>!\$&'()+, -./:;=?@^_` \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*)</code> in the request URL.</p> <p>The default value is <code>#{query}</code>, indicating that the query string of the request will be used.</p> <p>If the number of regular expression match groups is less than the specified number, <code>#{path}</code> is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, <code>\$abc#123</code>, and the matching result is <code>#123</code>. If the dollar sign (\$) is followed by a special character, for example, <code>\$#</code>, the matching result is <code>\$#</code>.</p>

Table 4-365 FixtedResponseConfig

Parameter	Type	Description
status_code	String	<p>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.</p>
content_type	String	<p>Specifies the format of the response body.</p> <p>The value can be <code>text/plain</code>, <code>text/css</code>, <code>text/html</code>, <code>application/javascript</code>, or <code>application/json</code>.</p>
message_body	String	<p>Specifies the content of the response message body.</p>

Example Requests

Creating a redirection for a listener.

```
POST https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/l7policies
{
  "l7policy" : {
    "action" : "REDIRECT_TO_LISTENER",
```



```
"listener_id" : "e2220d2a-3faf-44f3-8cd6-0c42952bd0ab",  
"redirect_listener_id" : "48a97732-449e-4aab-b561-828d29e45050"  
}  
}
```

Example Responses

Status code: 201

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](#).

4.12.2 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 4-366 Path Parameters

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

Table 4-367 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. Value range: 0–2000 Default value: 2000

Parameter	Mandatory	Type	Description
page_reverse	No	Boolean	<p>Specifies whether to use reverse query.</p> <p>Value options:</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 of strings	<p>Specifies the ID of the enterprise project.</p> <ul style="list-style-type: none"> • If enterprise_project_id is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The elb:l7policies:list permission must be assigned to the user group. • If enterprise_project_id is specified, the value can be a specific enterprise project ID or all_granted_eps. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is all_granted_eps, resources in the enterprise projects with the elb:l7policies:list permission are queried. <p>Multiple values can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p>

Parameter	Mandatory	Type	Description
id	No	Array of strings	Specifies the forwarding policy ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> .
name	No	Array of strings	Specifies the forwarding policy name. Multiple names can be queried in the format of <i>name=xxx&name=xxx</i> .
description	No	Array of strings	Provides supplementary information about the forwarding policy. Multiple descriptions can be queried in the format of <i>description=xxx&description=xxx</i> .
admin_state_up	No	Boolean	Specifies the administrative status of the forwarding policy. This parameter is unsupported. Please do not use it.
listener_id	No	Array of strings	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 of integers	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 of strings	<p>Specifies where requests are forwarded.</p> <p>Value options:</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 of strings	<p>Specifies the URL to which requests will be forwarded.</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 of strings	<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 of strings	<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 of strings	Specifies the provisioning status of the forwarding policy. <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. Multiple provisioning statuses can be queried in the format of <i>provisioning_status=xxx&provisioning_status=xxx</i> .
display_all_rules	No	Boolean	Specifies whether to display details about the forwarding rule in the forwarding policy. Value options: <ul style="list-style-type: none">● true: Details about the forwarding rule are displayed.● false: Only the rule ID is displayed.
priority	No	Array of integers	Specifies the forwarding policy priority. A smaller value indicates a higher priority. Multiple priorities can be queried in the format of <i>position=xxx&position=xxx</i> .

Request Parameters

Table 4-368 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 4-369 Response body parameters

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

Table 4-370 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result. When page_reverse is set to true , this parameter is used together to query resources on the previous page.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

Table 4-371 L7Policy

Parameter	Type	Description
action	String	<p>Specifies where requests will be forwarded.</p> <p>Value options:</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>Note:</p> <ul style="list-style-type: none">• 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.• 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.</p> <p>Note: The value can only be true.</p>
description	String	<p>Provides supplementary information about the forwarding policy.</p>
id	String	<p>Specifies the forwarding policy ID.</p>
listener_id	String	<p>Specifies the ID of the listener to which the forwarding policy is added.</p>
name	String	<p>Specifies the forwarding policy name.</p>
position	Integer	<p>Specifies the forwarding policy priority. This parameter cannot be updated.</p> <p>This parameter is unsupported. Please do not use it.</p>

Parameter	Type	Description
priority	Integer	<p>Specifies the forwarding policy priority. A smaller value indicates a higher priority.</p> <p>Value ranges:</p> <ul style="list-style-type: none"> • If action is set to REDIRECT_TO_LISTENER, the priority ranges from 0 to 10,000. • If action is set to other values, the priority ranges from 1 to 10,000. <p>Default value options:</p> <ul style="list-style-type: none"> • If this parameter is not passed and enhance_l7policy_enable is set to false, the priority of the new forwarding policy is 1. • If action is set to REDIRECT_TO_LISTENER, the priority of the new forwarding policy is 0. • If action is set to other values, the priority of the new forwarding policy will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. <ul style="list-style-type: none"> - If no forwarding policies exist, the priority of the new forwarding policy will be 1 by default. - If the highest priority of existing forwarding policies is the maximum value (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 value. In this case, specify a value or adjust the priorities of existing forwarding policies. <p>Note:</p> <ul style="list-style-type: none"> • The value must be unique for forwarding policies of the same listener. • This parameter takes effect only when enhance_l7policy_enable is

Parameter	Type	Description
		<p>set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <ul style="list-style-type: none">• 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 path is, the higher the priority is. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default. <p>This parameter is supported by forwarding policies of shared load balancers.</p>
project_id	String	Specifies the project ID of the forwarding policy.
provisioning_statuses	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.• ERROR: Another forwarding policy of the same listener has the same forwarding rule.
redirect_pool_id	String	<p>Specifies the ID of the backend server group to which the requests are forwarded.</p> <p>Note: This parameter is valid only when action is set to REDIRECT_TO_POOL.</p>

Parameter	Type	Description
redirect_listener_id	String	<p>Specifies the ID of the listener to which requests are redirected.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter is mandatory when action is set to REDIRECT_TO_LISTENER. • 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>Note:</p> <ul style="list-style-type: none"> 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. 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. For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned. 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 used. For example, \${host} indicates the host in the URL to be redirected. 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>Value format: <i>protocol://host:port/path?query</i></p>
redirect_pools_extend_config	RedirectPoolsExtendConfig object	<p>Specifies the backend server group that requests are forwarded to.</p> <p>Note: This parameter takes effect only when action is set to REDIRECT_TO_POOL.</p>

Parameter	Type	Description
fixed_response_config	FixedResponseConfig object	<p>Specifies the configuration of the page that will be returned.</p> <p>Note:</p> <ul style="list-style-type: none"> 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. For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.
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> <p>This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.</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> <p>This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.</p>
enterprise_project_id	String	Specifies the ID of the enterprise project.

Table 4-372 RuleRef

Parameter	Type	Description
id	String	Specifies the forwarding rule ID.

Table 4-373 RedirectUrlConfig

Parameter	Type	Description
protocol	String	Specifies the protocol for redirection. The value can be HTTP , HTTPS , or `\${protocol}` . `\${protocol}` indicates that the protocol of the request will be used.
host	String	Specifies the name of the host 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.
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.
path	String	Specifies the path that requests are redirected to. The value can contain only letters, digits, and special characters: <code>_~'!@^-%#&\$.*+?,=!: \/()[]{}</code> and must start with a slash (/). <code>\$1</code> , <code>\$2</code> , <code>\$3</code> , and all the way to <code>\$9</code> match the wildcard asterisk (*) in the request URL. The default value is `\${path}` , indicating that the path of the request will be used.

Parameter	Type	Description
query	String	<p>Specifies the query string set in the URL for redirection.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters: !\$&'()*+,-./:;=?@^_`. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL.</p> <p>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>
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>

Table 4-374 RedirectPoolsExtendConfig

Parameter	Type	Description
rewrite_url_enable	Boolean	Specifies whether to set rewrite_url_enable to true .
rewrite_url_config	RewriteUrlConfig object	Specifies the URL for the backend server group that requests are forwarded to. This parameter takes effect only when action is set to REDIRECT_TO_POOL .

Table 4-375 RewriteUrlConfig

Parameter	Type	Description
host	String	<p>Specifies the domain name of the host that requests are redirected to.</p> <p>The domain name can contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</p> <p>The default value is `\${host}`, indicating that the host of the request will be used.</p>
path	String	<p>Specifies the path that requests are redirected to.</p> <p>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 (/).</p> <p><code>\$1</code>, <code>\$2</code>, <code>\$3</code>, and all the way to <code>\$9</code> 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>

Parameter	Type	Description
query	String	<p>Specifies the query string set in the URL for redirection.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters: <code>!\$&'()+, -./:;=?@^_` \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*)</code> in the request URL.</p> <p>The default value is `\${query}, indicating that the query string of the request will be used.</p> <p>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>

Table 4-376 FixedResponseConfig

Parameter	Type	Description
status_code	String	<p>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.</p>
content_type	String	<p>Specifies the format of the response body.</p> <p>The value can be text/plain, text/css, text/html, application/javascript, or application/json.</p>
message_body	String	<p>Specifies the content of the response message body.</p>

Example Requests

Querying forwarding policies

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/l7policies?display_all_rules=true
```

Example Responses

Status code: 200

Successful request.

```
{
  "request_id": "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](#).

4.12.3 Querying the Details of a Forwarding Policy

Function

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

Calling Method

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

URI

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

Table 4-377 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 4-378 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 4-379 Response body parameters

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

Table 4-380 L7Policy

Parameter	Type	Description
action	String	Specifies where requests will be forwarded. Value options: <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. Note: <ul style="list-style-type: none">• 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.• 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. Note: The value can only be true .

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

Parameter	Type	Description
priority	Integer	<p>Specifies the forwarding policy priority. A smaller value indicates a higher priority.</p> <p>Value ranges:</p> <ul style="list-style-type: none"> • If action is set to REDIRECT_TO_LISTENER, the priority ranges from 0 to 10,000. • If action is set to other values, the priority ranges from 1 to 10,000. <p>Default value options:</p> <ul style="list-style-type: none"> • If this parameter is not passed and enhance_l7policy_enable is set to false, the priority of the new forwarding policy is 1. • If action is set to REDIRECT_TO_LISTENER, the priority of the new forwarding policy is 0. • If action is set to other values, the priority of the new forwarding policy will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. <ul style="list-style-type: none"> - If no forwarding policies exist, the priority of the new forwarding policy will be 1 by default. - If the highest priority of existing forwarding policies is the maximum value (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 value. In this case, specify a value or adjust the priorities of existing forwarding policies. <p>Note:</p> <ul style="list-style-type: none"> • The value must be unique for forwarding policies of the same listener. • This parameter takes effect only when enhance_l7policy_enable is

Parameter	Type	Description
		<p>set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <ul style="list-style-type: none"> 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 path is, the higher the priority is. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default. <p>This parameter is supported by forwarding policies of shared load balancers.</p>
project_id	String	Specifies the project ID of the forwarding policy.
provisioning_statuses	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. ERROR: Another forwarding policy of the same listener has the same forwarding rule.
redirect_pool_id	String	<p>Specifies the ID of the backend server group to which the requests are forwarded.</p> <p>Note: This parameter is valid only when action is set to REDIRECT_TO_POOL.</p>

Parameter	Type	Description
redirect_listener_id	String	Specifies the ID of the listener to which requests are redirected. Note: <ul style="list-style-type: none">• This parameter is mandatory when action is set to REDIRECT_TO_LISTENER.• 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>Note:</p> <ul style="list-style-type: none"> 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. 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. For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned. 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 used. For example, \${host} indicates the host in the URL to be redirected. 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>Value format: <i>protocol://host:port/path?query</i></p>
redirect_pools_extend_config	RedirectPoolsExtendConfig object	<p>Specifies the backend server group that requests are forwarded to.</p> <p>Note: This parameter takes effect only when action is set to REDIRECT_TO_POOL.</p>

Parameter	Type	Description
fixed_response_config	FixedResponseConfig object	Specifies the configuration of the page that will be returned. Note: <ul style="list-style-type: none"> 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. For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.
created_at	String	Specifies the time when the forwarding policy was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
updated_at	String	Specifies the time when the forwarding policy was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
enterprise_project_id	String	Specifies the ID of the enterprise project.

Table 4-381 RuleRef

Parameter	Type	Description
id	String	Specifies the forwarding rule ID.

Table 4-382 RedirectUrlConfig

Parameter	Type	Description
protocol	String	Specifies the protocol for redirection. The value can be HTTP , HTTPS , or `\${protocol}` . `\${protocol}` indicates that the protocol of the request will be used.
host	String	Specifies the name of the host 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.
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.
path	String	Specifies the path that requests are redirected to. The value can contain only letters, digits, and special characters: <code>_~'!@^-%#&\$.*+?,=!: \/()[]{}</code> and must start with a slash (/). <code>\$1</code> , <code>\$2</code> , <code>\$3</code> , and all the way to <code>\$9</code> match the wildcard asterisk (*) in the request URL. The default value is `\${path}` , indicating that the path of the request will be used.

Parameter	Type	Description
query	String	<p>Specifies the query string set in the URL for redirection.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters: !\$&'()*+,-./:;=?@^_`. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL.</p> <p>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>
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>

Table 4-383 RedirectPoolsExtendConfig

Parameter	Type	Description
rewrite_url_enable	Boolean	Specifies whether to set rewrite_url_enable to true .
rewrite_url_config	RewriteUrlConfig object	Specifies the URL for the backend server group that requests are forwarded to. This parameter takes effect only when action is set to REDIRECT_TO_POOL .

Table 4-384 RewriteUrlConfig

Parameter	Type	Description
host	String	<p>Specifies the domain name of the host that requests are redirected to.</p> <p>The domain name can contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</p> <p>The default value is \${host}, indicating that the host of the request will be used.</p>
path	String	<p>Specifies the path that requests are redirected to.</p> <p>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 (/).</p> <p><code>\$1</code>, <code>\$2</code>, <code>\$3</code>, and all the way to <code>\$9</code> 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>

Parameter	Type	Description
query	String	<p>Specifies the query string set in the URL for redirection.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters: <code>!\$&'()+, -./:;=?@^_` \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*)</code> in the request URL.</p> <p>The default value is <code>#{query}</code>, indicating that the query string of the request will be used.</p> <p>If the number of regular expression match groups is less than the specified number, <code>#{path}</code> is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, <code>\$abc#123</code>, and the matching result is <code>#123</code>. If the dollar sign (\$) is followed by a special character, for example, <code>\$#</code>, the matching result is <code>\$#</code>.</p>

Table 4-385 FixtedResponseConfig

Parameter	Type	Description
status_code	String	<p>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.</p>
content_type	String	<p>Specifies the format of the response body.</p> <p>The value can be <code>text/plain</code>, <code>text/css</code>, <code>text/html</code>, <code>application/javascript</code>, or <code>application/json</code>.</p>
message_body	String	<p>Specifies the content of the response message body.</p>

Example Requests

Querying the details of a forwarding policy

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/l7policies/cf4360fd-8631-41ff-a6f5-b72c35da74be
```

Example Responses

Status code: 200

Successful request.

```
{
  "l7policy" : {
    "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](#).

4.12.4 Modifying a Forwarding Policy

Function

This API is used to update a forwarding policy.

Calling Method

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

URI

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

Table 4-386 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 4-387 Request header parameters

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

Table 4-388 Request body parameters

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

Table 4-389 UpdateL7PolicyOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the forwarding policy. Note: The value can only be true .
description	No	String	Provides supplementary information about the forwarding policy.

Parameter	Mandatory	Type	Description
name	No	String	Specifies the forwarding policy name.
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 updated or be null when action is set to REDIRECT_TO_LISTENER.• 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_pool_id	No	String	Specifies the ID of the backend server group that requests will be forwarded to. Note: <ul style="list-style-type: none">• 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 is valid when action is set to REDIRECT_TO_POOL. This parameter cannot be updated and cannot be null.• If this parameter is specified when action is set to REDIRECT_TO_LISTENER, an error will be reported.

Parameter	Mandatory	Type	Description
redirect_url_config	No	UpdateRedirectUrlConfig object	<p>Specifies the URL to which requests are forwarded.</p> <p>Note:</p> <ul style="list-style-type: none"> 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. 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. For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned. 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 used. For example, \${host} indicates the host in the URL to be redirected. 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>Value format: <i>protocol://host:port/path?query</i></p>

Parameter	Mandatory	Type	Description
fixed_response_config	No	UpdateFixedResponseConfig object	Specifies the configuration of the page that will be returned. Note: <ul style="list-style-type: none"> 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. For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.
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. Note: <ul style="list-style-type: none"> Each 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. The entire list will be replaced if you update it.

Parameter	Mandatory	Type	Description
priority	No	Integer	<p>Specifies the forwarding policy priority. A smaller value indicates a higher priority.</p> <p>Value ranges:</p> <ul style="list-style-type: none"> • If action is set to REDIRECT_TO_LISTENER, the priority ranges from 0 to 10,000. • If action is set to other values, the priority ranges from 1 to 10,000. <p>Default value options:</p> <ul style="list-style-type: none"> • If this parameter is not passed and enhance_l7policy_enable is set to false, the priority of the new forwarding policy is 1. • If action is set to REDIRECT_TO_LISTENER, the priority of the new forwarding policy is 0. • If action is set to other values, the priority of the new forwarding policy will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. <ul style="list-style-type: none"> – If no forwarding policies exist, the priority of the new forwarding policy will be 1 by default. – If the highest priority of existing forwarding policies is the maximum value (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 value. In this case, specify a value or adjust the priorities of

Parameter	Mandatory	Type	Description
			<p>existing forwarding policies.</p> <p>Note:</p> <ul style="list-style-type: none"> • The value must be unique for forwarding policies of the same listener. • This parameter takes 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. • 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 path is, the higher the priority is. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default. <p>This parameter is supported by forwarding policies of shared load balancers.</p>

Table 4-390 UpdateRedirectUrlConfig

Parameter	Mandatory	Type	Description
protocol	No	String	Specifies the protocol for redirection. The value can be HTTP , HTTPS , or `\${protocol} . `\${protocol} indicates that the protocol of the request will be used.
host	No	String	Specifies the name of the host 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.
port	No	String	Specifies the port that requests are redirected to. The default value is `\${port} , indicating that the port of the request will be used.
path	No	String	Specifies the path that requests are redirected to. The value can contain only letters, digits, and special characters: <code>_~' ;@^-%#&\$. * +?,=!: \/() [] {}</code> and must start with a slash (/). <code>\$1</code> , <code>\$2</code> , <code>\$3</code> , and all the way to <code>\$9</code> match the wildcard asterisk (*) in the request URL. The default value is `\${path} , indicating that the path of the request will be used.

Parameter	Mandatory	Type	Description
query	No	String	<p>Specifies the query string set in the URL for redirection.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters: !\$&'()*+,-./:;=?@^_`.\$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL.</p> <p>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>
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>
insert_headers_config	No	UpdateInsertHeadersConfig object	Specifies the headers you want to write into the request that matches the forwarding rule.
remove_headers_config	No	UpdateRemoveHeadersConfig object	Specifies the headers you want to remove from the request that matches the forwarding rule.

Table 4-391 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.
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 .
message_body	No	String	Specifies the content of the response message body.
insert_headers_config	No	UpdateInsertHeadersConfig object	Specifies the headers you want to write into the request that matches the forwarding rule.
remove_headers_config	No	UpdateRemoveHeadersConfig object	Specifies the headers you want to remove from the request that matches the forwarding rule.
traffic_limit_config	No	UpdateTrafficLimitConfig object	Specifies how requests are limited.

Table 4-392 UpdateInsertHeadersConfig

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

Table 4-393 UpdateInsertHeaderConfig

Parameter	Mandatory	Type	Description
key	Yes	String	<p>Specifies the key of the header you want to write into the request that matches the forwarding rule.</p> <p>The value is a string of 1 to 40 case-insensitive characters. Only letters, digits, hyphens (-), and underscores (_) are allowed.</p> <p>The key cannot be the following:</p> <p>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out.</p>
value_type	Yes	String	<p>Specifies the value type of the header.</p> <p>The value can be USER_DEFINED, REFERENCE_HEADER, or SYSTEM_DEFINED.</p>

Parameter	Mandatory	Type	Description
value	Yes	String	<p>Specifies the value of the header.</p> <p>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 4-394 UpdateRemoveHeadersConfig

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

Table 4-395 UpdateRemoveHeaderConfig

Parameter	Mandatory	Type	Description
key	Yes	String	<p>Specifies the key of the header you want to remove from the request that matches the forwarding rule.</p> <p>The value is a string of 1 to 40 case-insensitive characters. Only letters, digits, hyphens (-), and underscores (_) are allowed.</p> <p>The key cannot be the following:</p> <p>connection, upgrade, content-length, transfer-encoding, keep-alive, te, host, cookie, remoteip, authority, x-forwarded-host, x-forwarded-for, x-forwarded-for-port, x-forwarded-tls-certificate-id, x-forwarded-tls-protocol, x-forwarded-tls-cipher, x-forwarded-elb-ip, x-forwarded-port, x-forwarded-elb-id, x-forwarded-elb-vip, x-real-ip, x-forwarded-proto, x-nuwa-trace-ne-in, or x-nuwa-trace-ne-out.</p>

Table 4-396 UpdateTrafficLimitConfig

Parameter	Mandatory	Type	Description
qps	No	Integer	<p>Specifies the maximum number of queries per second (QPS). The value ranges from 0 to 100000. 0 indicates that QPS is not limited.</p>

Parameter	Mandatory	Type	Description
per_source_ip_qps	No	Integer	<p>Specifies the maximum number of queries per second (QPS) from a source IP address.</p> <p>This parameter is not available for QUIC listeners. The value can be 0 or null.</p> <p>The value ranges from 0 to 100000. 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.</p>
burst	No	Integer	<p>Specifies the maximum number of queries per second (QPS) from a source IP address.</p> <p>The value ranges from 0 to 100000. 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.</p>

Table 4-397 UpdateRedirectPoolsExtendConfig

Parameter	Mandatory	Type	Description
rewrite_url_enable	No	Boolean	Specifies whether to set rewrite_url_enable to true .
rewrite_url_config	No	UpdateRewriteUrlConfig object	Specifies the URL for the backend server group that requests are forwarded to. This parameter takes effect only when action is set to REDIRECT_TO_POOL .

Table 4-398 UpdateRewriteUrlConfig

Parameter	Mandatory	Type	Description
host	No	String	<p>Specifies the domain name of the host that requests are redirected to.</p> <p>The domain name can contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</p> <p>The default value is `\${host}, indicating that the host of the request will be used.</p>
path	No	String	<p>Specifies the path that requests are redirected to.</p> <p>The value can contain only letters, digits, and special characters: <code>_~';@^-%#&\$.+?,=!: /()</code> and must start with a slash (/).</p> <p><code>\$1</code>, <code>\$2</code>, <code>\$3</code>, and all the way to <code>\$9</code> 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>

Parameter	Mandatory	Type	Description
query	No	String	<p>Specifies the query string set in the URL for redirection.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters: !\$&'() +, -./;=?@^_` \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL.</p> <p>The default value is #{query}, indicating that the query string of the request will be used.</p> <p>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>

Table 4-399 CreateRuleOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	<p>Specifies the administrative status of the forwarding rule. The value can only be true.</p>

Parameter	Mandatory	Type	Description
compare_type	Yes	String	<p>Specifies how requests are matched with the forwarding rule.</p> <p>Value options:</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>

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.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter will take effect only when conditions is left blank. • 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.
project_id	No	String	Specifies the project ID.

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Specifies the type of the forwarding rule.</p> <p>Value options:</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. ● COOKIE: The cookie will be used for matching. <p>Note:</p> <p>If type is set to HOST_NAME, PATH, METHOD, or 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>
invert	No	Boolean	<p>Specifies whether reverse matching is supported.</p> <p>Value range: true or false</p> <p>Default value: false</p> <p>This parameter is unsupported. Please do not use it.</p>

Parameter	Mandatory	Type	Description
conditions	No	Array of CreateRuleCondition objects	Specifies the conditions contained in a forwarding rule. Note: <ul style="list-style-type: none">• This parameter will take effect when enhance_l7policy_enable is set to true.• If conditions is specified, key and value will not take effect.• The keys in the list must be the same, whereas each value must be unique.

Table 4-400 CreateRuleCondition

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

Parameter	Mandatory	Type	Description
value	Yes	String	<p>Specifies the value of the match item.</p> <p>Note:</p> <ul style="list-style-type: none"> The key of each condition in a forwarding policy must be the same. The value of each condition in a forwarding policy must be unique. <p>Value ranges:</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, key is left blank, 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, 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

Parameter	Mandatory	Type	Description
			<p>quotation marks are not 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 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, 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, 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.

Response Parameters

Status code: 200

Table 4-401 Response body parameters

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

Table 4-402 L7Policy

Parameter	Type	Description
action	String	Specifies where requests will be forwarded. Value options: <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. Note: <ul style="list-style-type: none">• 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.• 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. Note: The value can only be true .
description	String	Provides supplementary information about the forwarding policy.
id	String	Specifies the forwarding policy ID.

Parameter	Type	Description
listener_id	String	Specifies the ID of the listener to which the forwarding policy is added.
name	String	Specifies the forwarding policy name.
position	Integer	Specifies the forwarding policy priority. This parameter cannot be updated. This parameter is unsupported. Please do not use it.

Parameter	Type	Description
priority	Integer	<p>Specifies the forwarding policy priority. A smaller value indicates a higher priority.</p> <p>Value ranges:</p> <ul style="list-style-type: none"> • If action is set to REDIRECT_TO_LISTENER, the priority ranges from 0 to 10,000. • If action is set to other values, the priority ranges from 1 to 10,000. <p>Default value options:</p> <ul style="list-style-type: none"> • If this parameter is not passed and enhance_l7policy_enable is set to false, the priority of the new forwarding policy is 1. • If action is set to REDIRECT_TO_LISTENER, the priority of the new forwarding policy is 0. • If action is set to other values, the priority of the new forwarding policy will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. <ul style="list-style-type: none"> - If no forwarding policies exist, the priority of the new forwarding policy will be 1 by default. - If the highest priority of existing forwarding policies is the maximum value (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 value. In this case, specify a value or adjust the priorities of existing forwarding policies. <p>Note:</p> <ul style="list-style-type: none"> • The value must be unique for forwarding policies of the same listener. • This parameter takes effect only when enhance_l7policy_enable is

Parameter	Type	Description
		<p>set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <ul style="list-style-type: none"> 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 path is, the higher the priority is. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default. <p>This parameter is supported by forwarding policies of shared load balancers.</p>
project_id	String	Specifies the project ID of the forwarding policy.
provisioning_statuses	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. ERROR: Another forwarding policy of the same listener has the same forwarding rule.
redirect_pool_id	String	<p>Specifies the ID of the backend server group to which the requests are forwarded.</p> <p>Note: This parameter is valid only when action is set to REDIRECT_TO_POOL.</p>

Parameter	Type	Description
redirect_listener_id	String	<p>Specifies the ID of the listener to which requests are redirected.</p> <p>Note:</p> <ul style="list-style-type: none"> This parameter is mandatory when action is set to REDIRECT_TO_LISTENER. 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>Note:</p> <ul style="list-style-type: none"> 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. 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. For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned. 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 used. For example, \${host} indicates the host in the URL to be redirected. 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>Value format: <i>protocol://host:port/path?query</i></p>
redirect_pools_extend_config	RedirectPoolsExtendConfig object	<p>Specifies the backend server group that requests are forwarded to.</p> <p>Note: This parameter takes effect only when action is set to REDIRECT_TO_POOL.</p>

Parameter	Type	Description
fixed_response_config	FixedResponseConfig object	Specifies the configuration of the page that will be returned. Note: <ul style="list-style-type: none"> 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. For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.
created_at	String	Specifies the time when the forwarding policy was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
updated_at	String	Specifies the time when the forwarding policy was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
enterprise_project_id	String	Specifies the ID of the enterprise project.

Table 4-403 RuleRef

Parameter	Type	Description
id	String	Specifies the forwarding rule ID.

Table 4-404 RedirectUrlConfig

Parameter	Type	Description
protocol	String	Specifies the protocol for redirection. The value can be HTTP , HTTPS , or `\${protocol}` . `\${protocol}` indicates that the protocol of the request will be used.
host	String	Specifies the name of the host 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.
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.
path	String	Specifies the path that requests are redirected to. The value can contain only letters, digits, and special characters: <code>_~'!@^-%#&\$.*+?,=!: \/()[]{}</code> and must start with a slash (/). <code>\$1</code> , <code>\$2</code> , <code>\$3</code> , and all the way to <code>\$9</code> match the wildcard asterisk (*) in the request URL. The default value is `\${path}` , indicating that the path of the request will be used.

Parameter	Type	Description
query	String	<p>Specifies the query string set in the URL for redirection.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters: !\$&'()*+,-./:;=?@^_`. \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*) in the request URL.</p> <p>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>
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>

Table 4-405 RedirectPoolsExtendConfig

Parameter	Type	Description
rewrite_url_enable	Boolean	Specifies whether to set rewrite_url_enable to true .
rewrite_url_config	RewriteUrlConfig object	Specifies the URL for the backend server group that requests are forwarded to. This parameter takes effect only when action is set to REDIRECT_TO_POOL .

Table 4-406 RewriteUrlConfig

Parameter	Type	Description
host	String	<p>Specifies the domain name of the host that requests are redirected to.</p> <p>The domain name can contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.</p> <p>The default value is \${host}, indicating that the host of the request will be used.</p>
path	String	<p>Specifies the path that requests are redirected to.</p> <p>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 (/).</p> <p><code>\$1</code>, <code>\$2</code>, <code>\$3</code>, and all the way to <code>\$9</code> 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>

Parameter	Type	Description
query	String	<p>Specifies the query string set in the URL for redirection.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters: <code>!\$&'()+, -./:;=?@^_` \$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk (*)</code> in the request URL.</p> <p>The default value is <code>#{query}</code>, indicating that the query string of the request will be used.</p> <p>If the number of regular expression match groups is less than the specified number, <code>#{path}</code> is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, <code>\$abc#123</code>, and the matching result is <code>#123</code>. If the dollar sign (\$) is followed by a special character, for example, <code>\$#</code>, the matching result is <code>\$#</code>.</p>

Table 4-407 FixedResponseConfig

Parameter	Type	Description
status_code	String	<p>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.</p>
content_type	String	<p>Specifies the format of the response body.</p> <p>The value can be <code>text/plain</code>, <code>text/css</code>, <code>text/html</code>, <code>application/javascript</code>, or <code>application/json</code>.</p>
message_body	String	<p>Specifies the content of the response message body.</p>

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](#).

4.12.5 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 4-408 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 4-409 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](#).

4.12.6 Batch Modifying Forwarding Policy Priorities

Function

This API is used to batch modify the priorities of forwarding policies.

Constraints

This API is only used to update the priorities of forwarding policies added to a listener of a dedicated load balancer when **action** is set to **REDIRECT_TO_POOL**.

Calling Method

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

URI

POST /v3/{project_id}/elb/l7policies/batch-update-priority

Table 4-410 Path Parameters

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

Request Parameters

Table 4-411 Request header parameters

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

Table 4-412 Request body parameters

Parameter	Mandatory	Type	Description
l7policies	No	Array of BatchUpdatePriorityRequestBody objects	Specifies the forwarding policy.

Table 4-413 BatchUpdatePriorityRequestBody

Parameter	Mandatory	Type	Description
id	Yes	String	Specifies the ID of the forwarding policy.

Parameter	Mandatory	Type	Description
priority	Yes	Integer	<p>Specifies the forwarding policy priority. A smaller value indicates a higher priority.</p> <p>Value ranges:</p> <ul style="list-style-type: none"> • If action is set to REDIRECT_TO_LISTENER, the priority ranges from 0 to 10,000. • If action is set to other values, the priority ranges from 1 to 10,000. <p>Default value options:</p> <ul style="list-style-type: none"> • If this parameter is not passed and enhance_l7policy_enable is set to false, the priority of the new forwarding policy is 1. • If action is set to REDIRECT_TO_LISTENER, the priority of the new forwarding policy is 0. • If action is set to other values, the priority of the new forwarding policy will be a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. <ul style="list-style-type: none"> – If no forwarding policies exist, the priority of the new forwarding policy will be 1 by default. – If the highest priority of existing forwarding policies is the maximum value (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 value. In this case, specify a value or adjust the priorities of

Parameter	Mandatory	Type	Description
			<p>existing forwarding policies.</p> <p>Note:</p> <ul style="list-style-type: none"> • The value must be unique for forwarding policies of the same listener. • This parameter takes 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. • 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 path is, the higher the priority is. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default. <p>This parameter is supported by forwarding policies of shared load balancers.</p>

Response Parameters

Status code: 202

Table 4-414 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID.

Example Requests

Batch modifying the priorities of forwarding policies

```
POST https://{ELB_Endpoint}/v3/060576782980d5762f9ec014dd2f1148/elb/l7policies/batch-update-priority
{
  "l7policies" : [ {
    "id" : "1fe93e12-6e07-47a9-8f81-3346c015601d",
    "priority" : 11
  } ]
}
```

Example Responses

Status code: 202

Created

```
{
  "request_id" : "e5c07525-1470-47b6-9b0c-567527a036aa"
}
```

Status Codes

Status Code	Description
202	Created

Error Codes

See [Error Codes](#).

4.13 Forwarding Rule

4.13.1 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 4-415 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 4-416 Request header parameters

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

Table 4-417 Request body parameters

Parameter	Mandatory	Type	Description
rule	Yes	CreateRuleOption object	Specifies the forwarding rule.

Table 4-418 CreateRuleOption

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

Parameter	Mandatory	Type	Description
compare_type	Yes	String	<p>Specifies how requests are matched with the forwarding rule.</p> <p>Value options:</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>

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.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter will take effect only when conditions is left blank. • 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>_~!;@^-%#&\$.*+? ,=!: \\V() [] {}</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.
project_id	No	String	Specifies the project ID.

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Specifies the type of the forwarding rule.</p> <p>Value options:</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. ● COOKIE: The cookie will be used for matching. <p>Note:</p> <p>If type is set to HOST_NAME, PATH, METHOD, or 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>
invert	No	Boolean	<p>Specifies whether reverse matching is supported.</p> <p>Value range: true or false</p> <p>Default value: false</p> <p>This parameter is unsupported. Please do not use it.</p>

Parameter	Mandatory	Type	Description
conditions	No	Array of CreateRuleCondition objects	Specifies the conditions contained in a forwarding rule. Note: <ul style="list-style-type: none">• This parameter will take effect when enhance_l7policy_enable is set to true.• If conditions is specified, key and value will not take effect.• The keys in the list must be the same, whereas each value must be unique.

Table 4-419 CreateRuleCondition

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

Parameter	Mandatory	Type	Description
value	Yes	String	<p>Specifies the value of the match item.</p> <p>Note:</p> <ul style="list-style-type: none"> The key of each condition in a forwarding policy must be the same. The value of each condition in a forwarding policy must be unique. <p>Value ranges:</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, key is left blank, 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, 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

Parameter	Mandatory	Type	Description
			<p>quotation marks are not 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 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, 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, 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.

Response Parameters

Status code: 201

Table 4-420 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. Note: The value is automatically generated.
rule	L7Rule object	Specifies the forwarding rule.

Table 4-421 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. Value options: <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. Note: This parameter will not take effect if type is set to HOST_NAME or PATH .
project_id	String	Specifies the project ID.

Parameter	Type	Description
type	String	<p>Specifies the type of the forwarding rule.</p> <p>Value options:</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. ● COOKIE: The cookie will be used for matching. <p>Note:</p> <p>If type is set to HOST_NAME, PATH, METHOD, or 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	Type	Description
value	String	<p>Specifies the value of the match item.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter will take effect only when conditions is left blank. • 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 condition_pair will be used to specify the key and value.
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 rule ID.</p>

Parameter	Type	Description
conditions	Array of RuleCondition objects	Specifies the conditions contained in a forwarding rule. Note: <ul style="list-style-type: none">• This parameter will take effect when enhance_l7policy_enable is set to true.• If conditions is specified, key and value will not take effect.• 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). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
updated_at	String	Specifies the time when the forwarding rule was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.

Table 4-422 RuleCondition

Parameter	Type	Description
key	String	<p>Specifies the key of match item.</p> <p>Note:</p> <ul style="list-style-type: none">• All keys in the conditions list in the same rule must be the same.• If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is an empty string.• If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the request 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, and value indicates the value of the query parameter. The key is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({ }), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported.

Parameter	Type	Description
value	String	<p>Specifies the value of the match item.</p> <p>Note:</p> <ul style="list-style-type: none"> The key of each condition in a forwarding policy must be the same. The value of each condition in a forwarding policy must be unique. <p>Value ranges:</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, key is left blank, 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, 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

Parameter	Type	Description
		<p>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, 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, 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.

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](#).

4.13.2 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 4-423 Path Parameters

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

Table 4-424 Query Parameters

Parameter	Mandatory	Type	Description
limit	No	Integer	Specifies the number of records on each page. Value range: 0–2000 Default value: 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.
page_reverse	No	Boolean	Specifies whether to use reverse query. Value options: <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 of strings	Specifies the forwarding rule ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> .

Parameter	Mandatory	Type	Description
compare_type	No	Array of strings	<p>Specifies how requests are matched with the domain names or URL.</p> <p>Value options:</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>
provisioning_status	No	Array of strings	<p>Specifies the provisioning status of the forwarding rule. The value can only be ACTIVE, indicating that the forwarding rule is provisioned successfully.</p> <p>Multiple provisioning statuses can be queried in the format of <i>provisioning_status=xxx&provisioning_status=xxx</i>.</p>
invert	No	Boolean	<p>Specifies whether reverse matching is supported.</p> <p>The value is fixed at false. This parameter can be updated but remains invalid.</p>
admin_state_up	No	Boolean	<p>Specifies the administrative status of the forwarding rule.</p> <p>This parameter is unsupported. Please do not use it.</p>
value	No	Array of strings	<p>Specifies the value of the match content.</p> <p>Multiple values can be queried in the format of <i>value=xxx&value=xxx</i>.</p>

Parameter	Mandatory	Type	Description
key	No	Array of strings	<p>Specifies the key of the match content that is used to identify the forwarding rule.</p> <p>Multiple keys can be queried in the format of <i>key=xxx&key=xxx</i>.</p> <p>This parameter is unsupported. Please do not use it.</p>
type	No	Array of strings	<p>Specifies the match type. The value can be HOST_NAME or PATH.</p> <p>The type of forwarding rules for the same forwarding policy cannot be the same.</p> <p>Multiple types can be queried in the format of <i>type=xxx&type=xxx</i>.</p>
enterprise_project_id	No	Array of strings	<p>Specifies the ID of the enterprise project.</p> <ul style="list-style-type: none"> • If enterprise_project_id is not specified, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The elb:l7rules:list permission must be assigned to the user group. • If enterprise_project_id is specified, the value can be a specific enterprise project ID or all_granted_eps. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is all_granted_eps, resources in the enterprise projects with the elb:l7rules:list permission are queried. <p>Multiple values can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p>

Request Parameters

Table 4-425 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 4-426 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. Note: The value is automatically generated.
page_info	PageInfo object	Shows pagination information.
rules	Array of L7Rule objects	Lists the forwarding rules.

Table 4-427 PageInfo

Parameter	Type	Description
previous_marker	String	Specifies the ID of the first record in the pagination query result. When page_reverse is set to true , this parameter is used together to query resources on the previous page.
next_marker	String	Specifies the ID of the last record in the pagination query result.
current_count	Integer	Specifies the number of records.

Table 4-428 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. Value options: <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. Note: This parameter will not take effect if type is set to HOST_NAME or PATH .
project_id	String	Specifies the project ID.

Parameter	Type	Description
type	String	<p>Specifies the type of the forwarding rule.</p> <p>Value options:</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.• COOKIE: The cookie will be used for matching. <p>Note:</p> <p>If type is set to HOST_NAME, PATH, METHOD, or 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	Type	Description
value	String	<p>Specifies the value of the match item.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter will take effect only when conditions is left blank. • 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 condition_pair will be used to specify the key and value.
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 rule ID.</p>

Parameter	Type	Description
conditions	Array of RuleCondition objects	<p>Specifies the conditions contained in a forwarding rule.</p> <p>Note:</p> <ul style="list-style-type: none">• This parameter will take effect when enhance_l7policy_enable is set to true.• If conditions is specified, key and value will not take effect.• The keys in the list must be the same, whereas each value must be unique.
created_at	String	<p>Specifies the time when the forwarding rule was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p> <p>This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.</p>
updated_at	String	<p>Specifies the time when the forwarding rule was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p> <p>This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.</p>

Table 4-429 RuleCondition

Parameter	Type	Description
key	String	<p>Specifies the key of match item.</p> <p>Note:</p> <ul style="list-style-type: none">• All keys in the conditions list in the same rule must be the same.• If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is an empty string.• If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the request 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, and value indicates the value of the query parameter. The key is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({ }), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported.

Parameter	Type	Description
value	String	<p>Specifies the value of the match item.</p> <p>Note:</p> <ul style="list-style-type: none">• The key of each condition in a forwarding policy must be the same.• The value of each condition in a forwarding policy must be unique. <p>Value ranges:</p> <ul style="list-style-type: none">• If type is set to HOST_NAME, key is left blank, 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, 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

Parameter	Type	Description
		<p>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, 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, 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.

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](#).

4.13.3 Viewing the Details of a Forwarding Rule

Function

This API is used to view the details of a forwarding rule.

Calling Method

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

URI

GET /v3/{project_id}/elb/l7policies/{l7policy_id}/rules/{l7rule_id}

Table 4-430 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 4-431 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 4-432 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. Note: The value is automatically generated.
rule	L7Rule object	Specifies the forwarding rule.

Table 4-433 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. Value options: <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. Note: This parameter will not take effect if type is set to HOST_NAME or PATH .
project_id	String	Specifies the project ID.

Parameter	Type	Description
type	String	<p>Specifies the type of the forwarding rule.</p> <p>Value options:</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. • COOKIE: The cookie will be used for matching. <p>Note:</p> <p>If type is set to HOST_NAME, PATH, METHOD, or 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	Type	Description
value	String	<p>Specifies the value of the match item.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter will take effect only when conditions is left blank. • 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 condition_pair will be used to specify the key and value.
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 rule ID.</p>

Parameter	Type	Description
conditions	Array of RuleCondition objects	<p>Specifies the conditions contained in a forwarding rule.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter will take effect when enhance_l7policy_enable is set to true. • If conditions is specified, key and value will not take effect. • The keys in the list must be the same, whereas each value must be unique.
created_at	String	<p>Specifies the time when the forwarding rule was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p> <p>This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.</p>
updated_at	String	<p>Specifies the time when the forwarding rule was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p> <p>This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.</p>

Table 4-434 RuleCondition

Parameter	Type	Description
key	String	<p>Specifies the key of match item.</p> <p>Note:</p> <ul style="list-style-type: none">• All keys in the conditions list in the same rule must be the same.• If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is an empty string.• If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the request 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, and value indicates the value of the query parameter. The key is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({ }), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported.

Parameter	Type	Description
value	String	<p>Specifies the value of the match item.</p> <p>Note:</p> <ul style="list-style-type: none"> The key of each condition in a forwarding policy must be the same. The value of each condition in a forwarding policy must be unique. <p>Value ranges:</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, key is left blank, 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, 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

Parameter	Type	Description
		<p>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, 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, 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.

Example Requests

Querying the details of a given forwarding rule

```
GET https://{ELB_Endpoint}/v3/{99a3fff0d03c428eac3678da6a7d0f24}/elb/l7policies/cf4360fd-8631-41ff-a6f5-b72c35da74be/rules/84f4fcae-9c15-4e19-a99f-72c0b08fd3d7
```

Example Responses

Status code: 200

OK

```
{
  "rule" : {
    "compare_type" : "STARTS_WITH",
    "provisioning_status" : "ACTIVE",
    "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
    "invert" : false,
    "admin_state_up" : true,
    "value" : "/ccc.html",
    "key" : null,
    "type" : "PATH",
    "id" : "84f4fcae-9c15-4e19-a99f-72c0b08fd3d7"
  },
  "request_id" : "0d799435-259e-459f-b2bc-0beee06f6a77"
}
```

Status Codes

Status Code	Description
200	OK

Error Codes

See [Error Codes](#).

4.13.4 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 4-435 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 4-436 Request header parameters

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

Table 4-437 Request body parameters

Parameter	Mandatory	Type	Description
rule	Yes	UpdateL7RuleOption object	Specifies the forwarding rule.

Table 4-438 UpdateL7RuleOption

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the forwarding rule. The value can only be true .
compare_type	No	String	<p>Specifies how requests are matched with the forwarding rule.</p> <p>Value options:</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.

Parameter	Mandatory	Type	Description
invert	No	Boolean	Specifies whether reverse matching is supported. The value can be true or false . This parameter is unsupported. Please do not use it.
key	No	String	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. This parameter is unsupported. Please do not use it.

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.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter will take effect only when conditions is left blank. • 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>_~!;@^-%#&\$.*+? ,=!: \\V() [] {}</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.

Parameter	Mandatory	Type	Description
conditions	No	Array of UpdateRuleCondition objects	Specifies the conditions contained in a forwarding rule. Note: <ul style="list-style-type: none">• This parameter will take effect when enhance_l7policy_enable is set to true.• If conditions is specified, key and value will not take effect.• The keys in the list must be the same, whereas each value must be unique.

Table 4-439 UpdateRuleCondition

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

Parameter	Mandatory	Type	Description
value	No	String	<p>Specifies the value of the match item.</p> <p>Note:</p> <ul style="list-style-type: none"> The key of each condition in a forwarding policy must be the same. The value of each condition in a forwarding policy must be unique. <p>Value ranges:</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, key is left blank, 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, 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

Parameter	Mandatory	Type	Description
			<p>quotation marks are not 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 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, 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, 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.

Response Parameters

Status code: 200

Table 4-440 Response body parameters

Parameter	Type	Description
request_id	String	Specifies the request ID. Note: The value is automatically generated.
rule	L7Rule object	Specifies the forwarding rule.

Table 4-441 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. Value options: <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. Note: This parameter will not take effect if type is set to HOST_NAME or PATH .
project_id	String	Specifies the project ID.

Parameter	Type	Description
type	String	<p>Specifies the type of the forwarding rule.</p> <p>Value options:</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.• COOKIE: The cookie will be used for matching. <p>Note:</p> <p>If type is set to HOST_NAME, PATH, METHOD, or 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	Type	Description
value	String	<p>Specifies the value of the match item.</p> <p>Note:</p> <ul style="list-style-type: none"> This parameter will take effect only when conditions is left blank. 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 condition_pair will be used to specify the key and value.
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 rule ID.</p>

Parameter	Type	Description
conditions	Array of RuleCondition objects	Specifies the conditions contained in a forwarding rule. Note: <ul style="list-style-type: none">• This parameter will take effect when enhance_l7policy_enable is set to true.• If conditions is specified, key and value will not take effect.• 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). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.
updated_at	String	Specifies the time when the forwarding rule was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). This is a new field in this version, and it will not be returned for resources associated with existing dedicated load balancers and for resources associated with existing and new shared load balancers.

Table 4-442 RuleCondition

Parameter	Type	Description
key	String	<p>Specifies the key of match item.</p> <p>Note:</p> <ul style="list-style-type: none">• All keys in the conditions list in the same rule must be the same.• If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is an empty string.• If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the request 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, and value indicates the value of the query parameter. The key is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({ }), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported.

Parameter	Type	Description
value	String	<p>Specifies the value of the match item.</p> <p>Note:</p> <ul style="list-style-type: none"> The key of each condition in a forwarding policy must be the same. The value of each condition in a forwarding policy must be unique. <p>Value ranges:</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, key is left blank, 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, 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

Parameter	Type	Description
		<p>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, 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, 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.

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](#).

4.13.5 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 4-443 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 4-444 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](#).

5 APIs (V2)

5.1 Load Balancer

5.1.1 Creating a Load Balancer

Function

This API is used to create a private network load balancer. After the load balancer is created, its details, such as load balancer ID, IP address, and subnet ID, are returned.

To create a public network load balancer, you also need to call the API for assigning an EIP and associate this IP address to the port bound to the IP address of the private network load balancer.

You can set the **enterprise_project_id** parameter to perform fine-grained authorization for resources.

URI

POST /v2/{project_id}/elb/loadbalancers

Table 5-1 Parameter description

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

Request

Table 5-2 Parameter description

Parameter	Mandatory	Type	Description
loadbalancer	Yes	Loadbalancer object	Specifies the load balancer. For details, see Table 5-3 .

Table 5-3 loadbalancer parameter description

Parameter	Mandatory	Type	Description
name	No	String	Specifies the load balancer name. The value contains a maximum of 255 characters.
description	No	String	Provides supplementary information about the load balancer. The value contains a maximum of 255 characters.
tenant_id	No	String	Specifies the ID of the project where the load balancer is used. The value contains a maximum of 255 characters. The value must be the same as the value of project_id in the token.
vip_subnet_id	Yes	String	Specifies the ID of the IPv4 subnet where the load balancer works. Obtain the value by listing the subnets (The parameter is neutron_subnet_id). The private IP address of the load balancer is in this subnet. Only IPv4 subnets are supported.
provider	No	String	Specifies the provider of the load balancer. The value can only be vlb .

Parameter	Mandatory	Type	Description
vip_address	No	String	<p>Specifies the private IP address of the load balancer.</p> <p>This IP address must be the one in the subnet specified by vip_subnet_id. If this parameter is not specified, an IP address is automatically assigned to the load balancer from the subnet specified by vip_subnet_id.</p> <p>The value contains a maximum of 64 characters.</p>
admin_state_up	No	Boolean	<p>Specifies the administrative status of the load balancer. The load balancer stops receiving traffic after it is disabled.</p> <p>The value can be one of the following:</p> <p>true: Enable the load balancer.</p> <p>false: Disable the load balancer.</p> <p>Default value: true</p>
enterprise_project_id	No	String	<p>Specifies the enterprise project ID. When creating a load balancer, you can assign an enterprise project to the load balancer.</p> <p>The value is character string 0 or a UUID with hyphens (-). Value 0 indicates the default enterprise project. The default value is 0.</p>
protection_status	No	String	<p>Specifies whether modification protection is enabled. The value can be one of the following:</p> <ul style="list-style-type: none"> • nonProtection (default): Modification protection is not enabled. • consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console.
protection_reason	No	String	<p>Specifies the reason to enable modification protection. This parameter is valid only when protection_status is set to consoleProtection.</p>

Response

Table 5-4 Parameter description

Parameter	Type	Description
loadbalancer	Loadbalancer object	Specifies the load balancer. For details, see Table 5-5 .

Table 5-5 loadbalancer parameter description

Parameter	Type	Description
id	String	Specifies the load balancer ID.
tenant_id	String	Specifies the tenant ID.
name	String	Specifies the load balancer name. The value contains a maximum of 255 characters.
description	String	Provides supplementary information about the load balancer. The value contains a maximum of 255 characters.
vip_subnet_id	String	Specifies the ID of the IPv4 subnet where the load balancer works.
vip_port_id	String	Specifies the ID of the port bound to the private IP address of the load balancer.
provider	String	Specifies the provider of the load balancer.
vip_address	String	Specifies the private IP address of the load balancer. The value contains a maximum of 64 characters.
listeners	Array of Listeners objects	Lists the IDs of listeners added to the load balancer. For details, see Table 5-6 .
pools	Array of Pools objects	Lists the IDs of backend server groups associated with the load balancer. For details, see Table 5-7 .

Parameter	Type	Description
operating_status	String	Specifies the operating status of the load balancer. The value can be ONLINE or FROZEN .
provisioning_status	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the load balancer.
admin_state_up	Boolean	Specifies the administrative status of the load balancer. The load balancer stops receiving traffic after it is disabled. Value options: true : Enable a load balancer. false : Disable the load balancer.
tags	Array	Lists load balancer tags.
created_at	String	Specifies the time when the load balancer was created. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format. The value contains a maximum of 19 characters.
updated_at	String	Specifies the time when the load balancer was updated. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format. The value contains a maximum of 19 characters.
enterprise_project_id	String	Specifies the enterprise project ID. When creating a load balancer, you can assign an enterprise project to the load balancer. The value is character string 0 or a UUID with hyphens (-). Value 0 indicates the default enterprise project.

Parameter	Type	Description
charge_mode	String	Specifies how the load balancer will be billed. The value can be one of the following: <ul style="list-style-type: none">• flavor: indicates the guaranteed performance that allows the load balancer to handle up to 50,000 concurrent connections, 5,000 connections and 5,000 queries per second. You will be charged if the load balancer provides guaranteed performance.• null: indicates that guaranteed performance is not provided.
billing_info	String	Specifies whether the billing information is left blank.
protection_status	String	Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none">• nonProtection (default): Modification protection is not enabled.• consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console.
protection_reason	String	Specifies the reason to enable modification protection. This parameter is valid only when protection_status is set to consoleProtection .
publicips	Array of PublicIpInfo objects	Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer.

Table 5-6 listeners parameter description

Parameter	Type	Description
id	String	Specifies the ID of the associated listener.

Table 5-7 pools parameter description

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

Table 5-8 PublicIpInfo

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

Example Request

- Example request 1: Creating a private network load balancer
POST https://{Endpoint}/v2/1867112d054b427e808cc6096d8193a1/elb/loadbalancers

```
{
  "loadbalancer": {
    "name": "loadbalancer1",
    "description": "simple lb",
    "tenant_id": "1867112d054b427e808cc6096d8193a1",
    "vip_subnet_id": "58077bdb-d470-424b-8c45-2e3c65060a5b",
    "vip_address": "10.0.0.4",
    "admin_state_up": true,
    "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
  }
}
```

Example Response

- Example response 1

```
{
  "loadbalancer": {
    "description": "",
    "admin_state_up": true,
    "tenant_id": "1867112d054b427e808cc6096d8193a1",

    "provisioning_status": "ACTIVE",
    "vip_subnet_id": "58077bdb-d470-424b-8c45-2e3c65060a5b",
    "listeners": [],
    "vip_address": "10.0.0.4",
    "vip_port_id": "519f6af5-74aa-4347-9dba-84c440192877",
    "provider": "vlb",
    "pools": [],
    "tags": [],
    "id": "b0657373-0c68-41d1-980f-1a44d9e3ff01",
    "operating_status": "ONLINE",
    "name": "loadbalancer1",
    "created_at": "2018-07-25T01:54:13",
    "updated_at": "2018-07-25T01:54:14",
    "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
  }
}
```

```
}  
}
```

Status Code

For details, see [Status Codes](#).

5.1.2 Querying Load Balancers

Function

This API is used to query load balancers and display them in a list. Filter query and pagination query are supported.

Unless otherwise specified, exact match is applied.

URI

GET /v2/{project_id}/elb/loadbalancers

Table 5-9 Path parameters

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

Table 5-10 Query parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the load balancer from which pagination query starts, that is, the ID of the last load balancer on the previous page. This parameter must be used together with limit .
limit	No	Integer	Specifies the number of load balancers on each page. If this parameter is not set, all load balancers are queried by default.

Parameter	Mandatory	Type	Description
page_reverse	No	Boolean	Specifies the page direction. The value can be true or false , and the default value is false . The last page in the list requested with page_reverse set to false will not contain the "next" link, and the last page in the list requested with page_reverse set to true will not contain the "previous" link. This parameter must be used together with limit .
id	No	String	Specifies the load balancer ID.
description	No	String	Provides supplementary information about the load balancer. The value contains a maximum of 255 characters.
name	No	String	Specifies the load balancer name. The value contains a maximum of 255 characters.
operating_status	No	String	Specifies the operating status of the load balancer. The value can be ONLINE or FROZEN .
provisioning_status	No	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the load balancer.
admin_state_up	No	Boolean	Specifies the administrative status of the load balancer. The load balancer stops receiving traffic after it is disabled. The value can be one of the following: true : Enable the load balancer. false : Disable the load balancer.
vip_address	No	String	Specifies the private IP address of the load balancer. The value contains a maximum of 64 characters.
vip_port_id	No	String	Specifies the ID of the port bound to the private IP address of the load balancer.
vip_subnet_id	No	String	Specifies the ID of the IPv4 subnet where the load balancer works.

Parameter	Mandatory	Type	Description
member_address	No	String	Specifies the IP address of the backend server associated with the load balancer.
member_device_id	No	String	Specifies the ID of the cloud server used as the backend server associated with the load balancer.
vpc_id	No	String	Specifies the ID of the VPC where the load balancer resides.
enterprise_project_id	No	String	Specifies the enterprise project ID. <ul style="list-style-type: none"> If enterprise_project_id is not passed, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The elb:*list permissions must be assigned to the user group. If enterprise_project_id is passed, the value can be a specific enterprise project ID or all_granted_eps. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is all_granted_eps, resources in the enterprise projects with the elb:*list permissions are queried.

Request

None

Response

Table 5-11 Response parameters

Parameter	Type	Description
loadbalancers	Array of Loadbalancers objects	Lists the load balancers. For details, see Table 5-12 .

Table 5-12 loadbalancer parameter description

Parameter	Type	Description
id	String	Specifies the load balancer ID.

Parameter	Type	Description
tenant_id	String	Specifies the tenant ID.
name	String	Specifies the load balancer name. The value contains a maximum of 255 characters.
description	String	Provides supplementary information about the load balancer. The value contains a maximum of 255 characters.
vip_subnet_id	String	Specifies the ID of the IPv4 subnet where the load balancer works.
vip_port_id	String	Specifies the ID of the port bound to the private IP address of the load balancer.
provider	String	Specifies the provider of the load balancer.
vip_address	String	Specifies the private IP address of the load balancer. The value contains a maximum of 64 characters.
listeners	Array of Listeners objects	Lists the IDs of listeners added to the load balancer. For details, see Table 5-6 .
pools	Array of Pools objects	Lists the IDs of backend server groups associated with the load balancer. For details, see Table 5-7 .
operating_status	String	Specifies the operating status of the load balancer. The value can be ONLINE or FROZEN .
provisioning_status	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the load balancer.

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the load balancer. The load balancer stops receiving traffic after it is disabled. Value options: true : Enable a load balancer. false : Disable the load balancer.
tags	Array	Lists load balancer tags.
created_at	String	Specifies the time when the load balancer was created. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format. The value contains a maximum of 19 characters.
updated_at	String	Specifies the time when the load balancer was updated. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format. The value contains a maximum of 19 characters.
enterprise_project_id	String	Specifies the enterprise project ID. When creating a load balancer, you can assign an enterprise project to the load balancer. The value is character string 0 or a UUID with hyphens (-). Value 0 indicates the default enterprise project.

Parameter	Type	Description
charge_mode	String	Specifies how the load balancer will be billed. The value can be one of the following: <ul style="list-style-type: none">● flavor: indicates the guaranteed performance that allows the load balancer to handle up to 50,000 concurrent connections, 5,000 connections and 5,000 queries per second. You will be charged if the load balancer provides guaranteed performance.● null: indicates that guaranteed performance is not provided.
billing_info	String	Specifies whether the billing information is left blank.
protection_status	String	Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none">● nonProtection (default): Modification protection is not enabled.● consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console.
protection_reason	String	Specifies the reason to enable modification protection. This parameter is valid only when protection_status is set to consoleProtection .
publicips	Array of PublicIpInfo objects	Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer.

Table 5-13 listeners parameter description

Parameter	Type	Description
id	String	Specifies the ID of the associated listener.

Table 5-14 pools parameter description

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

Example Request

- Example request 1
GET https://{Endpoint}/v2/1a3e005cf9ce40308c900bcb08e5320c/elb/loadbalancers
- Example request 2
GET https://{Endpoint}/v2/1a3e005cf9ce40308c900bcb08e5320c/elb/loadbalancers?limit=10&marker=165b6a38-5278-4569-b747-b2ee65ea84a4
- Example request 3
GET https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/loadbalancers?member_address=192.168.0.198

Example Response

- Example response 1

```
{
  "loadbalancers": [
    {
      "description": "simple lb",
      "admin_state_up": true,
      "tenant_id": "1a3e005cf9ce40308c900bcb08e5320c",

      "provisioning_status": "ACTIVE",
      "vip_subnet_id": "5328f1e6-ce29-44f1-9493-b128a5653350",
      "listeners": [
        {
          "id": "45196943-2907-4369-87b1-c009b1d7ac35"
        }
      ],
      "vip_address": "10.0.0.2",
      "vip_port_id": "cbced4fe-6f6f-4fd6-9348-0c3d1219d6ca",
      "provider": "vlb",
      "pools": [
        {
          "id": "21d49cf7-4fd3-4cb6-8c48-b7fc6c259aab"
        }
      ],
      "id": "a9729389-6147-41a3-ab22-a24aed8692b2",
      "operating_status": "ONLINE",
      "tags": [],
      "name": "loadbalancer1",
      "created_at": "2018-07-25T01:54:13",
      "updated_at": "2018-07-25T01:54:14",
      "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
    }
  ]
}
```
- Example response 2

```
{
  "loadbalancers": [
    {
      "description": "",
      "provisioning_status": "ACTIVE",
      "tenant_id": "601240b9c5c94059b63d484c92cfe308",

      "admin_state_up": true,
```

```
"provider": "vlb",
"pools": [
  {
    "id": "b13dba4c-a44c-4c40-8f6e-ce7a162b9f22"
  },
  {
    "id": "4b9e765f-82ee-4128-911b-0a2d9ebc74c7"
  }
],
"listeners": [
  {
    "id": "21c41336-d0d3-4349-8641-6e82b4a4d097"
  }
],
"vip_port_id": "44ac5d9b-b0c0-4810-9a9d-c4dbf541e47e",
"operating_status": "ONLINE",
"vip_address": "192.168.0.234",
"vip_subnet_id": "9d60827e-0e5c-490a-8183-0b6ebf9084ca",
"id": "e79a7dd6-3a38-429a-95f9-c7f78b346cbe",
"tags": [],
"name": "elb-robot",
"created_at": "2018-07-25T01:54:13",
"updated_at": "2018-07-25T01:54:14",
"enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
}
]
```

- Example response 3

```
{
  "loadbalancers": [
    {
      "description": "",
      "provisioning_status": "ACTIVE",
      "tenant_id": "601240b9c5c94059b63d484c92cfe308",

      "admin_state_up": true,
      "provider": "vlb",
      "pools": [
        {
          "id": "ed75f16e-fcc6-403e-a3fb-4eae82005eab"
        },
        {
          "id": "f15f2723-4135-4bf8-9259-047d92684197"
        }
      ],
      "listeners": [
        {
          "id": "75045172-70e9-480d-9443-b8b6459948f7"
        },
        {
          "id": "b9a99cbb-d0a1-4269-bc5f-752ec37a10c3"
        }
      ],
      "vip_port_id": "fb3f10f0-9417-4cf2-a82e-8f1da1687484",
      "operating_status": "ONLINE",
      "vip_address": "192.168.0.16",
      "vip_subnet_id": "3a450aa4-f642-4da8-b70d-cafd4a633b51",
      "id": "bc7ba445-035a-4464-a1a3-a62cf4a14116",
      "tags": [],
      "name": "elb-hm-test",
      "created_at": "2018-07-25T01:54:13",
      "updated_at": "2018-07-25T01:54:14",
      "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
    }
  ]
}
```

Status Code

For details, see [Status Codes](#).

5.1.3 Querying Details of a Load Balancer

Function

This API is used to query details about a load balancer using its ID.

URI

GET /v2/{project_id}/elb/loadbalancers/{loadbalancer_id}

Table 5-15 Parameter description

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

Request

None

Response

Table 5-16 Response parameters

Parameter	Type	Description
loadbalancer	Loadbalancer object	Specifies the load balancer. For details, see Table 5-17 .

Table 5-17 [loadbalancer](#) parameter description

Parameter	Type	Description
id	String	Specifies the load balancer ID.
tenant_id	String	Specifies the tenant ID.
name	String	Specifies the load balancer name. The value contains a maximum of 255 characters.

Parameter	Type	Description
description	String	Provides supplementary information about the load balancer. The value contains a maximum of 255 characters.
vip_subnet_id	String	Specifies the ID of the IPv4 subnet where the load balancer works.
vip_port_id	String	Specifies the ID of the port bound to the private IP address of the load balancer.
provider	String	Specifies the provider of the load balancer.
vip_address	String	Specifies the private IP address of the load balancer. The value contains a maximum of 64 characters.
listeners	Array of Listeners objects	Lists the IDs of listeners added to the load balancer. For details, see Table 5-6 .
pools	Array of Pools objects	Lists the IDs of backend server groups associated with the load balancer. For details, see Table 5-7 .
operating_status	String	Specifies the operating status of the load balancer. The value can be ONLINE or FROZEN .
provisioning_status	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the load balancer.
admin_state_up	Boolean	Specifies the administrative status of the load balancer. The load balancer stops receiving traffic after it is disabled. Value options: true : Enable a load balancer. false : Disable the load balancer.
tags	Array	Lists load balancer tags.

Parameter	Type	Description
created_at	String	Specifies the time when the load balancer was created. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format. The value contains a maximum of 19 characters.
updated_at	String	Specifies the time when the load balancer was updated. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format. The value contains a maximum of 19 characters.
enterprise_project_id	String	Specifies the enterprise project ID. When creating a load balancer, you can assign an enterprise project to the load balancer. The value is character string 0 or a UUID with hyphens (-). Value 0 indicates the default enterprise project.
charge_mode	String	Specifies how the load balancer will be billed. The value can be one of the following: <ul style="list-style-type: none">• flavor: indicates the guaranteed performance that allows the load balancer to handle up to 50,000 concurrent connections, 5,000 connections and 5,000 queries per second. You will be charged if the load balancer provides guaranteed performance.• null: indicates that guaranteed performance is not provided.
billing_info	String	Specifies whether the billing information is left blank.

Parameter	Type	Description
protection_status	String	Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"> nonProtection (default): Modification protection is not enabled. consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console.
protection_reason	String	Specifies the reason to enable modification protection. This parameter is valid only when protection_status is set to consoleProtection .
publicips	Array of PublicIpInfo objects	Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer.

Table 5-18 listeners parameter description

Parameter	Type	Description
id	String	Specifies the ID of the associated listener.

Table 5-19 pools parameter description

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

Example Request

- Example request
GET https://{Endpoint}/v2/1867112d054b427e808cc6096d8193a1/elb/loadbalancers/3d77894d-2ffe-4411-ac0a-0d57689779b8

Example Response

- Example response

```
{
  "loadbalancer": {
    "description": "",
    "admin_state_up": true,
```

```
"tenant_id": "1867112d054b427e808cc6096d8193a1",
"provisioning_status": "ACTIVE",
"vip_subnet_id": "4f5e8efe-fbbe-405e-b48c-a41202ef697c",
"listeners": [
  {
    "id": "09e64049-2ab0-4763-a8c5-f4207875dc3e"
  }
],
"vip_address": "192.168.2.4",
"vip_port_id": "c7157e7a-036a-42ca-8474-100be22e3727",
"provider": "vlb",
"pools": [
  {
    "id": "b7e53dbd-62ab-4505-a280-5c066078a5c9"
  }
],
"id": "3d77894d-2ffe-4411-ac0a-0d57689779b8",
"operating_status": "ONLINE",
"tags": [],
"name": "lb-2",
"created_at": "2018-07-25T01:54:13",
"updated_at": "2018-07-25T01:54:14",
"enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
}
```

Status Code

For details, see [Status Codes](#).

5.1.4 Querying the Status Tree of a Load Balancer

Function

This API is used to query the status tree of a load balancer. You can use this API to query details about the associated listeners, backend server groups, backend servers, health checks, forwarding policies, and forwarding rules, helping you understand the topology of resources associated with the load balancer.

URI

GET /v2/{project_id}/elb/loadbalancers/{loadbalancer_id}/statuses

Table 5-20 Parameter description

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

Request

None

Response

Table 5-21 Parameter description

Parameter	Type	Description
statuses	Statuses object	Specifies the status tree of a load balancer. For details, see Table 5-22 .

Table 5-22 statuses parameter description

Parameter	Type	Description
loadbalancer	Loadbalancer object	Specifies the load balancer. For details, see Table 5-23 .

Table 5-23 loadbalancer parameter description

Parameter	Type	Description
id	String	Specifies the load balancer ID.
name	String	Specifies the load balancer name. The value contains a maximum of 255 characters.
listeners	Array of Listeners objects	Lists the listeners added to the load balancer. For details of this parameter, see Table 5-24 .
pools	Array of Pools objects	Lists the backend server groups associated with the load balancer. For details of this parameter, see Table 5-25 .

Parameter	Type	Description
operating_status	String	<p>This field is reserved.</p> <p>It specifies the operating status of the load balancer. The value can be one of the following:</p> <ul style="list-style-type: none"> • ONLINE (default): The load balancer is running normally. • DEGRADED: This status is displayed only when provisioning_status of a forwarding policy or forwarding rule added to a listener of the load balancer is set to ERROR 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 and the API for querying the load balancer status tree is called.
provisioning_status	String	<p>This parameter is reserved, and its value can only be ACTIVE.</p> <p>It specifies the provisioning status of the load balancer.</p>

Table 5-24 listeners parameter description

Parameter	Type	Description
id	String	Specifies the listener ID.
name	String	Specifies the listener name.
l7policies	Array of l7policies objects	Lists associated forwarding policies. For details of this parameter, see Table 5-28 .
pools	Array of Pools objects	Lists the backend server groups associated with the listener. For details of this parameter, see Table 5-25 .
operating_status	String	<p>This parameter is reserved, and its value can only be ONLINE.</p> <p>It specifies the operating status of the listener.</p>

Parameter	Type	Description
provisioning_status	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the listener.

Table 5-25 pools parameter description

Parameter	Type	Description
id	String	Specifies the ID of the backend server group.
name	String	Specifies the name of the backend server group.
healthmonitor	Healthmonitor object	Provides health check details of the backend server group. For details of this parameter, see Table 5-26 .
members	Array of Members objects	Lists the members contained in the backend server group. For details of this parameter, see Table 5-27 .
operating_status	String	This parameter is reserved, and its value can only be ONLINE . It specifies the operating status of the backend server group.
provisioning_status	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the backend server group.

Table 5-26 healthmonitor parameter description

Parameter	Type	Description
id	String	Specifies the health check ID.
name	String	Specifies the health check name.

Parameter	Type	Description
type	String	<ul style="list-style-type: none">Specifies the health check protocol.The value can be UDP_CONNECT, TCP, or HTTP.
provisioning_status	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the health check.

Table 5-27 members parameter description

Parameter	Type	Description
id	String	Specifies the backend server ID.
address	String	Specifies the private IP address of the backend server, for example, 192.168.3.11.
protocol_port	Integer	<ul style="list-style-type: none">Specifies the port used by the backend server.The port number ranges from 0 to 65535.

Parameter	Type	Description
operating_status	String	<p>This parameter is reserved. It specifies the operating status of the backend server. The value can be one of the following:</p> <ul style="list-style-type: none">● ONLINE: The backend server is running normally.● NO_MONITOR: No health check is configured for the backend server group that the backend server belongs to.● 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. <p>NOTE When admin_state_up is set to false and operating_status is set to OFFLINE for a backend server, DISABLED is returned for operating_status of the backend server in the response of this API.</p>
provisioning_status	String	<p>This parameter is reserved, and its value can only be ACTIVE. It specifies the provisioning status of the backend server.</p>

Table 5-28 l7policies parameter description

Parameter	Type	Description
id	String	Specifies the forwarding policy ID.
name	String	Specifies the forwarding policy name.

Parameter	Type	Description
rules	Array of Rules objects	Lists the forwarding rules of the forwarding policy. For details of this parameter, see Table 5-29 .
action	String	<ul style="list-style-type: none"> Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener. The value can be REDIRECT_TO_POOL or REDIRECT_TO_LISTENER. REDIRECT_TO_POOL: Requests are forwarded to another backend server group. REDIRECT_TO_LISTENER: Requests are redirected to an HTTPS listener.
provisioning_status	String	<p>This parameter is reserved. It specifies the provisioning status of the forwarding policy. The value can be one of the following:</p> <ul style="list-style-type: none"> ACTIVE (default): The forwarding policy is normal. ERROR: Another forwarding policy of the same listener has the same forwarding rule.

Table 5-29 rules parameter description

Parameter	Type	Description
id	String	Specifies the forwarding rule ID.
type	String	<ul style="list-style-type: none"> Specifies the match type of a forwarding rule. The value can be PATH or HOST_NAME. PATH: matches the path in the request. HOST_NAME: matches the domain name in the request.

Parameter	Type	Description
provisioning_status	String	This parameter is reserved. It specifies the provisioning status of the forwarding rule. The value can be one of the following: <ul style="list-style-type: none">● ACTIVE (default): The forwarding rule is normal.● ERROR: Another forwarding policy of the same listener has the same forwarding rule.

Example Request

- Example request

```
GET https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/loadbalancers/38278031-cfca-44be-81be-a412f618773b/statuses
```

Example Response

- Example response

```
{
  "statuses": {
    "loadbalancer": {
      "name": "lb-jy",
      "provisioning_status": "ACTIVE",
      "listeners": [
        {
          "name": "listener-jy-1",
          "provisioning_status": "ACTIVE",
          "pools": [
            {
              "name": "pool-jy-1",
              "provisioning_status": "ACTIVE",
              "healthmonitor": {
                "type": "TCP",
                "id": "7422b51a-0ed2-4702-9429-4f88349276c6",
                "name": "",
                "provisioning_status": "ACTIVE"
              },
              "members": [
                {
                  "protocol_port": 80,
                  "address": "192.168.44.11",
                  "id": "7bbf7151-0dce-4087-b316-06c7fa17b894",
                  "operating_status": "ONLINE",
                  "provisioning_status": "ACTIVE"
                }
              ],
              "id": "c54b3286-2349-4c5c-ade1-e6bb0b26ad18",
              "operating_status": "ONLINE"
            }
          ],
          "l7policies": [],
          "id": "eb84c5b4-9bc5-4bee-939d-3900fb05dc7b",
          "operating_status": "ONLINE"
        }
      ],
      "id": "c54b3286-2349-4c5c-ade1-e6bb0b26ad18",
      "operating_status": "ONLINE"
    }
  }
}
```

```
"pools": [
  {
    "name": "pool-jy-1",
    "provisioning_status": "ACTIVE",
    "healthmonitor": {
      "type": "TCP",
      "id": "7422b51a-0ed2-4702-9429-4f88349276c6",
      "name": "",
      "provisioning_status": "ACTIVE"
    },
    "members": [
      {
        "protocol_port": 80,
        "address": "192.168.44.11",
        "id": "7bbf7151-0dce-4087-b316-06c7fa17b894",
        "operating_status": "ONLINE",
        "provisioning_status": "ACTIVE"
      }
    ],
    "id": "c54b3286-2349-4c5c-ade1-e6bb0b26ad18",
    "operating_status": "ONLINE"
  },
  {
    "id": "38278031-cfca-44be-81be-a412f618773b",
    "operating_status": "ONLINE"
  }
]
```

Status Code

For details, see [Status Codes](#).

5.1.5 Updating a Load Balancer

Function

This API is used to update the name or description of a load balancer.

URI

PUT /v2/{project_id}/elb/loadbalancers/{loadbalancer_id}

Table 5-30 Parameter description

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

Request

Table 5-31 Parameter description

Parameter	Mandatory	Type	Description
loadbalancer	Yes	Loadbalancer object	Specifies the load balancer. For details, see Table 5-32 .

Table 5-32 loadbalancer parameter description

Parameter	Mandatory	Type	Description
name	No	String	Specifies the load balancer name. The value contains a maximum of 255 characters.
description	No	String	Provides supplementary information about the load balancer. The value contains a maximum of 255 characters.
admin_state_up	No	Boolean	Specifies the administrative status of the load balancer. The load balancer stops receiving traffic after it is disabled. The value can be one of the following: true : Enable the load balancer. false : Disable the load balancer.

Parameter	Mandatory	Type	Description
protection_status	No	String	Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"> • nonProtection (default): Modification protection is not enabled. • consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console.
protection_reason	No	String	Specifies the reason to enable modification protection. This parameter is valid only when protection_status is set to consoleProtection .

Response

Table 5-33 Response parameters

Parameter	Type	Description
loadbalancer	Loadbalancer object	Specifies the load balancer. For details, see Table 5-34 .

Table 5-34 loadbalancer parameter description

Parameter	Type	Description
id	String	Specifies the load balancer ID.
tenant_id	String	Specifies the tenant ID.
name	String	Specifies the load balancer name. The value contains a maximum of 255 characters.

Parameter	Type	Description
description	String	Provides supplementary information about the load balancer. The value contains a maximum of 255 characters.
vip_subnet_id	String	Specifies the ID of the IPv4 subnet where the load balancer works.
vip_port_id	String	Specifies the ID of the port bound to the private IP address of the load balancer.
provider	String	Specifies the provider of the load balancer.
vip_address	String	Specifies the private IP address of the load balancer. The value contains a maximum of 64 characters.
listeners	Array of Listeners objects	Lists the IDs of listeners added to the load balancer. For details, see Table 5-6 .
pools	Array of Pools objects	Lists the IDs of backend server groups associated with the load balancer. For details, see Table 5-7 .
operating_status	String	Specifies the operating status of the load balancer. The value can be ONLINE or FROZEN .
provisioning_status	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the load balancer.
admin_state_up	Boolean	Specifies the administrative status of the load balancer. The load balancer stops receiving traffic after it is disabled. Value options: true : Enable a load balancer. false : Disable the load balancer.
tags	Array	Lists load balancer tags.

Parameter	Type	Description
created_at	String	Specifies the time when the load balancer was created. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format. The value contains a maximum of 19 characters.
updated_at	String	Specifies the time when the load balancer was updated. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format. The value contains a maximum of 19 characters.
enterprise_project_id	String	Specifies the enterprise project ID. When creating a load balancer, you can assign an enterprise project to the load balancer. The value is character string 0 or a UUID with hyphens (-). Value 0 indicates the default enterprise project.
charge_mode	String	Specifies how the load balancer will be billed. The value can be one of the following: <ul style="list-style-type: none">● flavor: indicates the guaranteed performance that allows the load balancer to handle up to 50,000 concurrent connections, 5,000 connections and 5,000 queries per second. You will be charged if the load balancer provides guaranteed performance.● null: indicates that guaranteed performance is not provided.
billing_info	String	Specifies whether the billing information is left blank.

Parameter	Type	Description
protection_status	String	Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none">• nonProtection (default): Modification protection is not enabled.• consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console.
protection_reason	String	Specifies the reason to enable modification protection. This parameter is valid only when protection_status is set to consoleProtection .
publicips	Array of PublicIpInfo objects	Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer.

Table 5-35 listeners parameter description

Parameter	Type	Description
id	String	Specifies the ID of the associated listener.

Table 5-36 pools parameter description

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

Example Request

- Example request

```
PUT https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/loadbalancers/1e11b74e-30b7-4b78-b09b-84aec4a04487
```

```
{
  "loadbalancer": {
    "name": "lb_update_test",
    "description": "lb update test"
  }
}
```

Example Response

- Example response

```
{
  "loadbalancer": {
    "description": "simple lb2",
    "admin_state_up": true,
    "tenant_id": "145483a5107745e9b3d80f956713e6a3",
    "provisioning_status": "ACTIVE",
    "vip_subnet_id": "823d5866-6e30-45c2-9b1a-a1ebc3757fdb",
    "listeners": [
      {
        "id": "37ffe679-08ef-436e-b6bd-cf66fb4c3de2"
      }
    ],
    "vip_address": "192.172.1.68",
    "vip_port_id": "f42e3019-67f7-4d2a-8d1c-af49e7c22fa6",
    "provider": "vlb",
    "tags": [],
    "pools": [
      {
        "id": "75c4f2d4-a213-4408-9fa8-d64708e8d1df"
      }
    ],
    "id": "c32a9f9a-0cc6-4f38-bb9c-cde79a533c19",
    "operating_status": "ONLINE",
    "name": "loadbalancer-test2",
    "created_at": "2018-07-25T01:54:13",
    "updated_at": "2018-07-25T01:54:14",
    "enterprise_project_id": "0aad99bc-f5f6-4f78-8404-c598d76b0ed2"
  }
}
```

Status Code

For details, see [Status Codes](#).

5.1.6 Deleting a Load Balancer

Function

This API is used to delete a load balancer by ID.

Constraints

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

URI

DELETE /v2/{project_id}/elb/loadbalancers/{loadbalancer_id}

Table 5-37 Parameter description

Parameter	Mandator y	Type	Description
project_id	Yes	Strin g	Specifies the project ID.

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

Request

None

Response

None

Example Request

- Example request
DELETE https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/loadbalancers/90f7c765-0bc9-47c4-8513-4cc0c264c8f8

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

5.2 Backend Server Group

5.2.1 Adding a Backend Server Group

Function

This API is used to add a backend server group. After multiple backend servers are added to a backend server group, requests are distributed among backend servers based on the load balancing algorithm configured for the backend server group and the weight set for each backend server.

Constraints

- If parameter **session-persistence** is configured, parameter **cookie_name** is available only when the value of **type** is **APP_COOKIE**.

URI

POST /v2/{project_id}/elb/pools

Table 5-38 Parameter description

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

Request

Table 5-39 Parameter description

Parameter	Mandatory	Type	Description
pool	Yes	Pool object	Specifies the backend server group. For details, see Table 5-40 .

Table 5-40 pool parameter description

Parameter	Mandatory	Type	Description
tenant_id	No	String	Specifies the ID of the project where the backend server group is used. The value must be the same as the value of project_id in the token. The value contains a maximum of 255 characters.
name	No	String	Specifies the name of the backend server group. The value contains a maximum of 255 characters.
description	No	String	Provides supplementary information about the backend server group. The value contains a maximum of 255 characters.

Parameter	Mandatory	Type	Description
protocol	Yes	String	<p>Specifies the protocol that the backend server group uses to receive requests.</p> <p>TCP, UDP, and HTTP are supported.</p> <p>When a backend server group is associated with a listener, the relationships between the protocol used by the listener and the protocol of the backend server group are as follows:</p> <ul style="list-style-type: none"> • When the protocol used by the listener is UDP, the protocol of the backend server group must be UDP. • When the protocol used by the listener is TCP, the protocol of the backend server group must be TCP. • When the protocol used by the listener is HTTP or TERMINATED_HTTPS, the protocol of the backend server group must be HTTP.
lb_algorithm	Yes	String	<p>Specifies the load balancing algorithm of the backend server group.</p> <p>The value can be:</p> <ul style="list-style-type: none"> • ROUND_ROBIN: indicates the weighted round robin algorithm. • LEAST_CONNECTIONS: indicates the weighted least connections algorithm. • SOURCE_IP: indicates the source IP hash algorithm. <p>When the value is SOURCE_IP, the weights of backend servers in the server group are invalid.</p>
admin_state_up	No	Boolean	<p>Specifies the administrative status of the backend server group.</p> <p>This parameter is reserved, and the default value is true.</p>

Parameter	Mandatory	Type	Description
listener_id	No	String	Specifies the ID of the listener associated with the backend server group. Specify either listener_id or loadbalancer_id , or both of them.
loadbalancer_id	No	String	Specifies the ID of the load balancer associated with the backend server group. Specify either listener_id or loadbalancer_id , or both of them.
session_persistence	No	Session Persistence object	Specifies the sticky session timeout duration in minutes. For details, see Table 5-41 . If the value is null , the sticky session feature is disabled.
protection_status	No	String	Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none">• nonProtection (default): Modification protection is not enabled.• consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console.
protection_reason	No	String	Specifies the reason to enable modification protection. This parameter is valid only when protection_status is set to consoleProtection .

Table 5-41 session_persistence parameter description

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Specifies the sticky session type.</p> <p>The value can be:</p> <ul style="list-style-type: none">● SOURCE_IP: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.● HTTP_COOKIE: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.● APP_COOKIE: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server. <p>When the protocol of the backend server group is TCP, only SOURCE_IP takes effect. When the protocol of the backend server group is HTTP, only HTTP_COOKIE or APP_COOKIE takes effect.</p>
cookie_name	No	String	<p>Specifies the cookie name. The name can contain up to 64 characters, including letters, digits, hyphens (-), and underscores (_).</p> <p>This parameter is mandatory when the sticky session type is APP_COOKIE.</p>

Parameter	Mandatory	Type	Description
persistence_timeout	No	Integer	<p>Specifies the sticky session timeout duration in minutes.</p> <p>This parameter is invalid when type is set to APP_COOKIE.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none"> • When the protocol of the backend server group is TCP or UDP, the value ranges from 1 to 60. • When the protocol of the backend server group is HTTP or HTTPS, the value ranges from 1 to 1440.

Response

Table 5-42 Parameter description

Parameter	Type	Description
pool	Pool object	Specifies the backend server group. For details, see Table 5-43 .

Table 5-43 pool parameter description

Parameter	Type	Description
id	String	Specifies the ID of the backend server group.
tenant_id	String	Specifies the ID of the project where the backend server group is used. The value contains a maximum of 255 characters.
name	String	Specifies the name of the backend server group. The value contains a maximum of 255 characters.
description	String	Provides supplementary information about the backend server group. The value contains a maximum of 255 characters.

Parameter	Type	Description
protocol	String	<p>Specifies the protocol that the backend server group uses to receive requests. TCP, UDP, and HTTP are supported.</p> <p>When a backend server group is associated with a listener, the relationships between the protocol used by the listener and the protocol of the backend server group are as follows:</p> <ul style="list-style-type: none">• When the protocol used by the listener is UDP, the protocol of the backend server group must be UDP.• When the protocol used by the listener is TCP, the protocol of the backend server group must be TCP.• When the protocol used by the listener is HTTP or TERMINATED_HTTPS, the protocol of the backend server group must be HTTP.
lb_algorithm	String	<p>Specifies the load balancing algorithm of the backend server group.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none">• ROUND_ROBIN: indicates the weighted round robin algorithm.• LEAST_CONNECTIONS: indicates the weighted least connections algorithm.• SOURCE_IP: indicates the source IP hash algorithm. When the value is SOURCE_IP, the weights of backend servers in the server group are invalid.
members	Array of Members objects	<p>Lists the IDs of backend servers in the backend server group. For details, see Table 5-44.</p>
healthmonitor_id	String	<p>Specifies the ID of the health check configured for the backend server group.</p>
admin_state_up	Boolean	<p>Specifies the administrative status of the backend server group.</p> <p>This parameter is reserved. The value can be true or false.</p> <ul style="list-style-type: none">• true: Enabled• false: Disabled

Parameter	Type	Description
listeners	Array of Listeners objects	Lists the IDs of listeners associated with the backend server group. For details, see Table 5-45 .
loadbalancers	Array of Loadbalancers objects	Lists the IDs of load balancers associated with the backend server group. For details, see Table 5-46 .
session_persistence	SessionPersistence object	Specifies whether to enable the sticky session feature. For details, see Table 5-47 . Once sticky session are enabled, requests from the same client are sent to the same backend server during the session. When sticky sessions are disabled, the value is null .
protection_status	String	String Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"> nonProtection (default): Modification protection is not enabled. consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console.
protection_reason	String	String Specifies the reason to enable modification protection. This parameter is valid only when protection_status is set to consoleProtection .

Table 5-44 members parameter description

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

Table 5-45 listeners parameter description

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

Table 5-46 loadbalancers parameter description

Parameter	Type	Description
id	String	Specifies the ID of the associated load balancer.

Table 5-47 session_persistence parameter description

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Specifies the sticky session type. The value can be:</p> <ul style="list-style-type: none">● SOURCE_IP: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.● HTTP_COOKIE: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.● APP_COOKIE: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server. <p>When the protocol of the backend server group is TCP, only SOURCE_IP takes effect. When the protocol of the backend server group is HTTP, only HTTP_COOKIE or APP_COOKIE takes effect.</p>
cookie_name	No	String	<p>Specifies the cookie name. The name can contain up to 64 characters, including letters, digits, hyphens (-), and underscores (_).</p> <p>This parameter is mandatory when the sticky session type is APP_COOKIE.</p>

Parameter	Mandatory	Type	Description
persistence_timeout	No	Integer	<p>Specifies the sticky session timeout duration in minutes.</p> <p>This parameter is invalid when type is set to APP_COOKIE.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none">• When the protocol of the backend server group is TCP or UDP, the value ranges from 1 to 60.• When the protocol of the backend server group is HTTP or HTTPS, the value ranges from 1 to 1440.

Example Request

- **Example request 1: Adding an HTTP backend server group**
POST <https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/pools>

```
{
  "pool": {
    "lb_algorithm": "ROUND_ROBIN",
    "loadbalancer_id": "63ad9dfe-4750-479f-9630-ada43ccc8117",
    "protocol": "HTTP"
  }
}
```
- **Example request 2: Adding a backend server group with the value of **type** set to **APP_COOKIE****
POST <https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/pools>

```
{
  "pool": {
    "lb_algorithm": "ROUND_ROBIN",
    "loadbalancer_id": "370fb112-e920-486a-b051-1d0d30704dd3",
    "protocol": "HTTP",
    "session_persistence": {
      "cookie_name": "my_cookie",
      "type": "APP_COOKIE",
      "persistence_timeout": 1
    },
    "admin_state_up": true
  }
}
```
- **Example request 3: Adding an HTTP backend server group with the value of **type** set to **HTTP_COOKIE****
POST <https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/pools>

```
{
  "pool": {
    "lb_algorithm": "ROUND_ROBIN",
    "loadbalancer_id": "63ad9dfe-4750-479f-9630-ada43ccc8117",
    "protocol": "HTTP",
    "session_persistence": {
      "type": "HTTP_COOKIE"
    }
  }
}
```

```
}  
}
```

Example Response

- Example response 1

```
{  
  "pool": {  
    "lb_algorithm": "ROUND_ROBIN",  
    "protocol": "HTTP",  
    "description": "",  
    "admin_state_up": true,  
    "loadbalancers": [  
      {  
        "id": "63ad9dfe-4750-479f-9630-ada43ccc8117"  
      }  
    ],  
    "tenant_id": "601240b9c5c94059b63d484c92cfe308",  
    "session_persistence": null,  
    "healthmonitor_id": null,  
    "listeners": [],  
    "members": [],  
    "id": "4e496951-befb-47bf-9573-c1cd11825c07",  
    "name": ""  
  }  
}
```

- Example response 2

```
{  
  "pool": {  
    "lb_algorithm": "ROUND_ROBIN",  
    "protocol": "HTTP",  
    "description": "",  
    "admin_state_up": true,  
    "loadbalancers": [  
      {  
        "id": "6b041b9e-976b-40ba-b075-375be6110b53"  
      }  
    ],  
    "tenant_id": "145483a5107745e9b3d80f956713e6a3",  
    "session_persistence": {  
      "cookie_name": "my_cookie",  
      "type": "APP_COOKIE",  
      "persistence_timeout": 1  
    },  
    "healthmonitor_id": null,  
    "listeners": [  
      {  
        "id": "370fb112-e920-486a-b051-1d0d30704dd3"  
      }  
    ],  
    "members": [],  
    "id": "307f8968-9474-4d0c-8434-66be09dabcc1",  
    "name": ""  
  }  
}
```

- Example response 3

```
{  
  "pool": {  
    "lb_algorithm": "ROUND_ROBIN",  
    "protocol": "HTTP",  
    "description": "",  
    "admin_state_up": true,  
    "loadbalancers": [  
      {  
        "id": "63ad9dfe-4750-479f-9630-ada43ccc8117"  
      }  
    ],  
    "tenant_id": "601240b9c5c94059b63d484c92cfe308",
```



```
"session_persistence": {  
  "persistence_timeout": 1440,  
  "cookie_name": null,  
  "type": "HTTP_COOKIE"  
},  
"healthmonitor_id": null,  
"listeners": [],  
"members": [],  
"id": "d46eab56-d76b-4cd3-8952-3c3c4cf113aa",  
"name": ""  
}
```

Status Code

For details, see [Status Codes](#).

5.2.2 Querying Backend Server Groups

Function

This API is used to query the backend server groups and display them in a list. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

URI

GET /v2/{project_id}/elb/pools

Table 5-48 Path parameters

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

Table 5-49 Query parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the backend server group from which pagination query starts, that is, the ID of the last backend server group on the previous page. If this parameter is not specified, the first page will be queried. This parameter must be used together with limit .
limit	No	Integer	Specifies the number of backend server groups on each page. If this parameter is not set, all backend server groups are queried by default.

Parameter	Mandatory	Type	Description
page_reverse	No	Boolean	Specifies the page direction. The value can be true or false , and the default value is false . The last page in the list requested with page_reverse set to false will not contain the "next" link, and the last page in the list requested with page_reverse set to true will not contain the "previous" link. This parameter must be used together with limit .
id	No	String	Specifies the ID of the backend server group.
name	No	String	Specifies the name of the backend server group. The value contains a maximum of 255 characters.
description	No	String	Provides supplementary information about the backend server group. The value contains a maximum of 255 characters.
healthmonitor_id	No	String	Specifies the ID of the health check configured for the backend server group.
loadbalancer_id	No	String	Specifies the ID of the load balancer associated with the backend server group.
protocol	No	String	Specifies the protocol that the backend server group uses to receive requests. TCP, UDP, and HTTP are supported.

Parameter	Mandatory	Type	Description
lb_algorithm	No	String	<p>Specifies the load balancing algorithm of the backend server group.</p> <p>The value can be:</p> <ul style="list-style-type: none">• ROUND_ROBIN: indicates the weighted round robin algorithm.• LEAST_CONNECTIONS: indicates the weighted least connections algorithm.• SOURCE_IP: indicates the source IP hash algorithm. <p>When the value is SOURCE_IP, the weights of backend servers in the server group are invalid. For details about parameter weight, see Response.</p>
member_address	No	String	<p>Lists the IDs of backend servers in the backend server group.</p>
member_device_id	No	String	<p>Specifies the ID of the cloud server used as the backend server in the backend server group.</p>
enterprise_project_id	No	String	<p>Specifies the enterprise project ID. Enterprise projects are used for fine-grained authentication.</p> <ul style="list-style-type: none">• If loadbalancer_id is passed, the ID of the enterprise project to which the load balancer belongs is used for authentication.• If loadbalancer_id is not passed but healthmonitor_id is passed, the ID of the enterprise project to which the load balancer belongs is used for authentication.• If any of the three parameters enterprise_project_id, loadbalancer_id, or healthmonitor_id is not passed, fine-grained authentication is performed. The elb:loadbalancers:list permissions must be assigned to the user group.

Request

None

Response

Table 5-50 Parameter description

Parameter	Type	Description
pools	Array of Pools objects	Specifies the backend server group. For details, see Table 5-51 .

Table 5-51 pool parameter description

Parameter	Type	Description
id	String	Specifies the ID of the backend server group.
tenant_id	String	Specifies the ID of the project where the backend server group is used. The value contains a maximum of 255 characters.
name	String	Specifies the name of the backend server group. The value contains a maximum of 255 characters.
description	String	Provides supplementary information about the backend server group. The value contains a maximum of 255 characters.

Parameter	Type	Description
protocol	String	<p>Specifies the protocol that the backend server group uses to receive requests. TCP, UDP, and HTTP are supported.</p> <p>When a backend server group is associated with a listener, the relationships between the protocol used by the listener and the protocol of the backend server group are as follows:</p> <ul style="list-style-type: none">• When the protocol used by the listener is UDP, the protocol of the backend server group must be UDP.• When the protocol used by the listener is TCP, the protocol of the backend server group must be TCP.• When the protocol used by the listener is HTTP or TERMINATED_HTTPS, the protocol of the backend server group must be HTTP.
lb_algorithm	String	<p>Specifies the load balancing algorithm of the backend server group.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none">• ROUND_ROBIN: indicates the weighted round robin algorithm.• LEAST_CONNECTIONS: indicates the weighted least connections algorithm.• SOURCE_IP: indicates the source IP hash algorithm. When the value is SOURCE_IP, the weights of backend servers in the server group are invalid.
members	Array of Members objects	<p>Lists the IDs of backend servers in the backend server group. For details, see Table 5-44.</p>
healthmonitor_id	String	<p>Specifies the ID of the health check configured for the backend server group.</p>
admin_state_up	Boolean	<p>Specifies the administrative status of the backend server group.</p> <p>This parameter is reserved. The value can be true or false.</p> <ul style="list-style-type: none">• true: Enabled• false: Disabled

Parameter	Type	Description
listeners	Array of Listeners objects	Lists the IDs of listeners associated with the backend server group. For details, see Table 5-45 .
loadbalancers	Array of Loadbalancers objects	Lists the IDs of load balancers associated with the backend server group. For details, see Table 5-46 .
session_persistence	SessionPersistence object	Specifies whether to enable the sticky session feature. For details, see Table 5-47 . Once sticky session are enabled, requests from the same client are sent to the same backend server during the session. When sticky sessions are disabled, the value is null .
protection_status	String	String Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none"> nonProtection (default): Modification protection is not enabled. consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console.
protection_reason	String	String Specifies the reason to enable modification protection. This parameter is valid only when protection_status is set to consoleProtection .

Table 5-52 members parameter description

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

Table 5-53 listeners parameter description

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

Table 5-54 loadbalancers parameter description

Parameter	Type	Description
id	String	Specifies the ID of the associated load balancer.

Table 5-55 session_persistence parameter description

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Specifies the sticky session type. The value can be:</p> <ul style="list-style-type: none">• SOURCE_IP: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.• HTTP_COOKIE: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.• APP_COOKIE: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server. <p>When the protocol of the backend server group is TCP, only SOURCE_IP takes effect. When the protocol of the backend server group is HTTP, only HTTP_COOKIE or APP_COOKIE takes effect.</p>
cookie_name	No	String	<p>Specifies the cookie name. The name can contain up to 64 characters, including letters, digits, hyphens (-), and underscores (_).</p> <p>This parameter is mandatory when the sticky session type is APP_COOKIE.</p>

Parameter	Mandatory	Type	Description
persistence_timeout	No	Integer	<p>Specifies the sticky session timeout duration in minutes.</p> <p>This parameter is invalid when type is set to APP_COOKIE.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none">• When the protocol of the backend server group is TCP or UDP, the value ranges from 1 to 60.• When the protocol of the backend server group is HTTP or HTTPS, the value ranges from 1 to 1440.

Example Request

- Example request 1: Querying all backend server groups
GET https://{Endpoint}/v2/1867112d054b427e808cc6096d8193a1/elb/pools
- Example request 2: Querying backend server groups whose load balancing algorithm is **SOURCE_IP**
GET https://{Endpoint}/v2/1867112d054b427e808cc6096d8193a1/elb/pools?lb_algorithm=SOURCE_IP

Example Response

- Example response 1

```
{
  "pools": [
    {
      "lb_algorithm": "SOURCE_IP",
      "protocol": "TCP",
      "description": "",
      "admin_state_up": true,
      "loadbalancers": [
        {
          "id": "07d28d4a-4899-40a3-a939-5d09d69019e1"
        }
      ],
      "tenant_id": "1867112d054b427e808cc6096d8193a1",
      "session_persistence": null,
      "healthmonitor_id": null,
      "listeners": [
        {
          "id": "1b421c2d-7e78-4a78-9ee4-c8ccba41f15b"
        }
      ],
      "members": [
        {
          "id": "88f9c079-29cb-435a-b98f-0c5c0b90c2bd"
        },
        {
          "id": "2f4c9644-d5d2-4cf8-a3c0-944239a4f58c"
        }
      ],
      "id": "3a9f50bb-f041-4eac-a117-82472d8a0007",
      "name": "my-pool"
    }
  ]
}
```



```
    }  
  ]  
}  
• Example response 2  
{  
  "pools": [  
    {  
      "lb_algorithm": "SOURCE_IP",  
      "protocol": "TCP",  
      "description": "",  
      "admin_state_up": true,  
      "loadbalancers": [  
        {  
          "id": "07d28d4a-4899-40a3-a939-5d09d69019e1"  
        }  
      ],  
      "tenant_id": "1867112d054b427e808cc6096d8193a1",  
  
      "session_persistence": null,  
      "healthmonitor_id": null,  
      "listeners": [  
        {  
          "id": "1b421c2d-7e78-4a78-9ee4-c8ccba41f15b"  
        }  
      ],  
      "members": [  
        {  
          "id": "88f9c079-29cb-435a-b98f-0c5c0b90c2bd"  
        },  
        {  
          "id": "2f4c9644-d5d2-4cf8-a3c0-944239a4f58c"  
        }  
      ],  
      "id": "3a9f50bb-f041-4eac-a117-82472d8a0007",  
      "name": "my-pool"  
    }  
  ]  
}
```

Status Code

For details, see [Status Codes](#).

5.2.3 Querying Details of a Backend Server Group

Function

This API is used to query details about a backend server group using its ID.

URI

GET /v2/{project_id}/elb/pools/{pool_id}

Table 5-56 Parameter description

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.

Request

None

Response

Table 5-57 Response parameters

Parameter	Type	Description
pool	Pool object	Specifies the backend server group. For details, see Table 5-58 .

Table 5-58 pool parameter description

Parameter	Type	Description
id	String	Specifies the ID of the backend server group.
tenant_id	String	Specifies the ID of the project where the backend server group is used. The value contains a maximum of 255 characters.
name	String	Specifies the name of the backend server group. The value contains a maximum of 255 characters.
description	String	Provides supplementary information about the backend server group. The value contains a maximum of 255 characters.

Parameter	Type	Description
protocol	String	<p>Specifies the protocol that the backend server group uses to receive requests. TCP, UDP, and HTTP are supported.</p> <p>When a backend server group is associated with a listener, the relationships between the protocol used by the listener and the protocol of the backend server group are as follows:</p> <ul style="list-style-type: none">• When the protocol used by the listener is UDP, the protocol of the backend server group must be UDP.• When the protocol used by the listener is TCP, the protocol of the backend server group must be TCP.• When the protocol used by the listener is HTTP or TERMINATED_HTTPS, the protocol of the backend server group must be HTTP.
lb_algorithm	String	<p>Specifies the load balancing algorithm of the backend server group.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none">• ROUND_ROBIN: indicates the weighted round robin algorithm.• LEAST_CONNECTIONS: indicates the weighted least connections algorithm.• SOURCE_IP: indicates the source IP hash algorithm. When the value is SOURCE_IP, the weights of backend servers in the server group are invalid.
members	Array of Members objects	<p>Lists the IDs of backend servers in the backend server group. For details, see Table 5-44.</p>
healthmonitor_id	String	<p>Specifies the ID of the health check configured for the backend server group.</p>
admin_state_up	Boolean	<p>Specifies the administrative status of the backend server group.</p> <p>This parameter is reserved. The value can be true or false.</p> <ul style="list-style-type: none">• true: Enabled• false: Disabled

Parameter	Type	Description
listeners	Array of Listeners objects	Lists the IDs of listeners associated with the backend server group. For details, see Table 5-45 .
loadbalancers	Array of Loadbalancers objects	Lists the IDs of load balancers associated with the backend server group. For details, see Table 5-46 .
session_persistence	SessionPersistence object	Specifies whether to enable the sticky session feature. For details, see Table 5-47 . Once sticky session are enabled, requests from the same client are sent to the same backend server during the session. When sticky sessions are disabled, the value is null .
protection_status	String	String Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none">• nonProtection (default): Modification protection is not enabled.• consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console.
protection_reason	String	String Specifies the reason to enable modification protection. This parameter is valid only when protection_status is set to consoleProtection .

Table 5-59 members parameter description

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

Table 5-60 listeners parameter description

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

Table 5-61 loadbalancers parameter description

Parameter	Type	Description
id	String	Specifies the ID of the associated load balancer.

Table 5-62 session_persistence parameter description

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Specifies the sticky session type. The value can be:</p> <ul style="list-style-type: none">● SOURCE_IP: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.● HTTP_COOKIE: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.● APP_COOKIE: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server. <p>When the protocol of the backend server group is TCP, only SOURCE_IP takes effect. When the protocol of the backend server group is HTTP, only HTTP_COOKIE or APP_COOKIE takes effect.</p>
cookie_name	No	String	<p>Specifies the cookie name. The name can contain up to 64 characters, including letters, digits, hyphens (-), and underscores (_).</p> <p>This parameter is mandatory when the sticky session type is APP_COOKIE.</p>

Parameter	Mandatory	Type	Description
persistence_timeout	No	Integer	<p>Specifies the sticky session timeout duration in minutes.</p> <p>This parameter is invalid when type is set to APP_COOKIE.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none">• When the protocol of the backend server group is TCP or UDP, the value ranges from 1 to 60.• When the protocol of the backend server group is HTTP or HTTPS, the value ranges from 1 to 1440.

Example Request

- Example request: Querying details of a backend server group
GET https://[Endpoint]/v2/1867112d054b427e808cc6096d8193a1/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332

Example Response

- Example response 1

```
{
  "pool": {
    "lb_algorithm": "SOURCE_IP",
    "protocol": "TCP",
    "description": "",
    "admin_state_up": true,
    "loadbalancers": [
      {
        "id": "6f52004c-3fe9-4c09-b8ce-ed9d9c74a3b1"
      }
    ],
    "tenant_id": "1867112d054b427e808cc6096d8193a1",
    "session_persistence": null,
    "healthmonitor_id": null,
    "listeners": [
      {
        "id": "6e29b2cd-4e53-40f6-ae7b-29e918de67f2"
      }
    ],
    "members": [],
    "id": "5a9a3e9e-d1aa-448e-af37-a70171f2a332",
    "name": "my-pool"
  }
}
```

Status Code

For details, see [Status Codes](#).

5.2.4 Updating a Backend Server Group

Function

This API is used to update a backend server group.

Constraints

If the provisioning status of the load balancer associated with a backend server group is not **ACTIVE**, the backend server group cannot be updated.

URI

PUT /v2/{project_id}/elb/pools/{pool_id}

Table 5-63 Parameter description

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

Request

Table 5-64 Parameter description

Parameter	Mandatory	Type	Description
pool	Yes	Pool object	Specifies the backend server group. For details, see Table 5-65 .

Table 5-65 pool parameter description

Parameter	Mandatory	Type	Description
name	No	String	Specifies the name of the backend server group. The value contains a maximum of 255 characters.

Parameter	Mandatory	Type	Description
description	No	String	Provides supplementary information about the backend server group. The value contains a maximum of 255 characters.
lb_algorithm	No	String	Specifies the load balancing algorithm of the backend server group. The value can be: <ul style="list-style-type: none"> ● ROUND_ROBIN: indicates the weighted round robin algorithm. ● LEAST_CONNECTIONS: indicates the weighted least connections algorithm. ● SOURCE_IP: indicates the source IP hash algorithm. When the value is SOURCE_IP , the weights of backend servers in the server group are invalid.
admin_state_up	No	Boolean	Specifies the administrative status of the backend server group. This parameter is reserved, and the default value is true .
session_persistence	No	SessionPersistence object	Specifies whether to enable the sticky session feature. For details, see Table 5-66 . Once sticky session are enabled, requests from the same client are sent to the same backend server during the session. When sticky sessions are disabled, the value is null .

Parameter	Mandatory	Type	Description
protection_status	No	String	Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none">• nonProtection (default): Modification protection is not enabled.• consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console.
protection_reason	No	String	Specifies the reason to enable modification protection. This parameter is valid only when protection_status is set to consoleProtection .

Table 5-66 session_persistence parameter description

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Specifies the sticky session type.</p> <p>The value can be:</p> <ul style="list-style-type: none">● SOURCE_IP: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.● HTTP_COOKIE: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.● APP_COOKIE: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server. <p>When the protocol of the backend server group is TCP, only SOURCE_IP takes effect. When the protocol of the backend server group is HTTP, only HTTP_COOKIE or APP_COOKIE takes effect.</p>
cookie_name	No	String	<p>Specifies the cookie name. The name can contain up to 64 characters, including letters, digits, hyphens (-), and underscores (_).</p> <p>This parameter is mandatory when the sticky session type is APP_COOKIE.</p>

Parameter	Mandatory	Type	Description
persistence_timeout	No	Integer	<p>Specifies the sticky session timeout duration in minutes.</p> <p>This parameter is invalid when type is set to APP_COOKIE.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none"> When the protocol of the backend server group is TCP or UDP, the value ranges from 1 to 60. When the protocol of the backend server group is HTTP or HTTPS, the value ranges from 1 to 1440.

Response

Table 5-67 Response parameters

Parameter	Type	Description
pool	Pool object	Specifies the backend server group. For details, see Table 5-68 .

Table 5-68 pool parameter description

Parameter	Type	Description
id	String	Specifies the ID of the backend server group.
tenant_id	String	Specifies the ID of the project where the backend server group is used. The value contains a maximum of 255 characters.
name	String	Specifies the name of the backend server group. The value contains a maximum of 255 characters.
description	String	Provides supplementary information about the backend server group. The value contains a maximum of 255 characters.

Parameter	Type	Description
protocol	String	<p>Specifies the protocol that the backend server group uses to receive requests. TCP, UDP, and HTTP are supported.</p> <p>When a backend server group is associated with a listener, the relationships between the protocol used by the listener and the protocol of the backend server group are as follows:</p> <ul style="list-style-type: none">• When the protocol used by the listener is UDP, the protocol of the backend server group must be UDP.• When the protocol used by the listener is TCP, the protocol of the backend server group must be TCP.• When the protocol used by the listener is HTTP or TERMINATED_HTTPS, the protocol of the backend server group must be HTTP.
lb_algorithm	String	<p>Specifies the load balancing algorithm of the backend server group.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none">• ROUND_ROBIN: indicates the weighted round robin algorithm.• LEAST_CONNECTIONS: indicates the weighted least connections algorithm.• SOURCE_IP: indicates the source IP hash algorithm. When the value is SOURCE_IP, the weights of backend servers in the server group are invalid.
members	Array of Members objects	<p>Lists the IDs of backend servers in the backend server group. For details, see Table 5-44.</p>
healthmonitor_id	String	<p>Specifies the ID of the health check configured for the backend server group.</p>
admin_state_up	Boolean	<p>Specifies the administrative status of the backend server group.</p> <p>This parameter is reserved. The value can be true or false.</p> <ul style="list-style-type: none">• true: Enabled• false: Disabled

Parameter	Type	Description
listeners	Array of Listeners objects	Lists the IDs of listeners associated with the backend server group. For details, see Table 5-45 .
loadbalancers	Array of Loadbalancers objects	Lists the IDs of load balancers associated with the backend server group. For details, see Table 5-46 .
session_persistence	SessionPersistence object	Specifies whether to enable the sticky session feature. For details, see Table 5-47 . Once sticky session are enabled, requests from the same client are sent to the same backend server during the session. When sticky sessions are disabled, the value is null .
protection_status	String	String Specifies whether modification protection is enabled. The value can be one of the following: <ul style="list-style-type: none">• nonProtection (default): Modification protection is not enabled.• consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console.
protection_reason	String	String Specifies the reason to enable modification protection. This parameter is valid only when protection_status is set to consoleProtection .

Table 5-69 members parameter description

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

Table 5-70 listeners parameter description

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

Table 5-71 loadbalancers parameter description

Parameter	Type	Description
id	String	Specifies the ID of the associated load balancer.

Table 5-72 session_persistence parameter description

Parameter	Mandatory	Type	Description
type	Yes	String	<p>Specifies the sticky session type.</p> <p>The value can be:</p> <ul style="list-style-type: none">● SOURCE_IP: Requests are distributed based on the client's IP address. Requests from the same IP address are sent to the same backend server.● HTTP_COOKIE: When the client sends a request for the first time, the load balancer automatically generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to the backend server that processes the first request.● APP_COOKIE: When the client sends a request for the first time, the backend server that receives the request generates a cookie and inserts the cookie into the response message. Subsequent requests are sent to this backend server. <p>When the protocol of the backend server group is TCP, only SOURCE_IP takes effect. When the protocol of the backend server group is HTTP, only HTTP_COOKIE or APP_COOKIE takes effect.</p>
cookie_name	No	String	<p>Specifies the cookie name. The name can contain up to 64 characters, including letters, digits, hyphens (-), and underscores (_).</p> <p>This parameter is mandatory when the sticky session type is APP_COOKIE.</p>

Parameter	Mandatory	Type	Description
persistence_timeout	No	Integer	<p>Specifies the sticky session timeout duration in minutes.</p> <p>This parameter is invalid when type is set to APP_COOKIE.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none">• When the protocol of the backend server group is TCP or UDP, the value ranges from 1 to 60.• When the protocol of the backend server group is HTTP or HTTPS, the value ranges from 1 to 1440.

Example Request

- Example request: Updating the name, description, and load balancing algorithm of a backend server group

PUT <https://{Endpoint}/v2/1a3e005cf9ce40308c900bcb08e5320c/elb/pools/12ff63af-4127-4074-a251-bcb2ecc53ebe>

```
{
  "pool": {
    "name": "pool2",
    "description": "pool two",
    "lb_algorithm": "LEAST_CONNECTIONS"
  }
}
```

Example Response

- Example response 1

```
{
  "pool": {
    "lb_algorithm": "LEAST_CONNECTIONS",
    "protocol": "HTTP",
    "description": "pool two",
    "admin_state_up": false,
    "tenant_id": "1a3e005cf9ce40308c900bcb08e5320c",
    "session_persistence": {
      "cookie_name": null,
      "type": "HTTP_COOKIE",
      "persistence_timeout": 1440
    },
    "healthmonitor_id": null,
    "listeners": [
      {
        "id": "39de4d56-d663-46e5-85a1-5b9d5fa17829"
      }
    ],
    "members": [],
    "id": "12ff63af-4127-4074-a251-bcb2ecc53ebe",
    "name": "pool2"
  }
}
```

Status Code

For details, see [Status Codes](#).

5.2.5 Deleting a Backend Server Group

Function

This API is used to delete a backend server group.

Constraints

Before deleting a backend server group, remove all backend servers, delete the health check, and disassociate forwarding policies from the backend server group by changing the value of **redirect_pool_id** to **null**. For details, see [Updating a Forwarding Policy](#).

URI

DELETE /v2/{project_id}/elb/pools/{pool_id}

Table 5-73 Parameter description

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

Request

None

Response

None

Example Request

- Example request: Deleting a backend server group
DELETE https://{Endpoint}/v2/1a3e005cf9ce40308c900bcb08e5320c/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

5.3 Backend Server

5.3.1 Adding a Backend Server

Function

This API is used to add a backend server to a specific backend server group. After a backend server group is added to a listener, traffic is distributed to backend servers in this server group using the specified load balancing algorithm.

Constraints

Two backend servers in a backend server group cannot have the same private IP address or port number.

The subnet specified during server creation must be in the same VPC as the subnet from which the private IP address of the load balancer is assigned.

You can call this API for a maximum of 200 times per minute globally.

URI

POST /v2/{project_id}/elb/pools/{pool_id}/members

Table 5-74 Parameter description

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

Request

Table 5-75 Parameter description

Parameter	Mandatory	Type	Description
member	Yes	Member object	Specifies the backend server. For details, see Table 5-76 .

Table 5-76 member parameter description

Parameter	Mandatory	Type	Description
tenant_id	No	String	Specifies the ID of the project where the backend server is used. The value must be the same as the value of project_id in the token. The value contains a maximum of 255 characters.
name	No	String	Specifies the backend server name. The value is an empty character string by default. The value contains a maximum of 255 characters.
address	Yes	String	Specifies the private IP address of the backend server. This IP address must be in the subnet specified by subnet_id . This parameter can be set only to the IP address of the primary NIC, for example, 192.168.3.11. The value contains a maximum of 64 characters.
protocol_port	Yes	Integer	Specifies the port used by the backend server. The port number ranges from 1 to 65535.
subnet_id	Yes	String	Specifies the ID of the subnet where the backend server resides. The private IP address of the backend server is in this subnet. Only IPv4 subnets are supported.

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the backend server. This parameter is reserved, and the default value is true .
weight	No	Integer	Specifies the backend server weight. The value ranges from 0 to 100 . If the value is 0 , the backend server will not accept new requests. The default value is 1 .

Response

Table 5-77 Parameter description

Parameter	Type	Description
member	Member object	Specifies the backend server. For details, see Table 5-78 .

Table 5-78 member parameter description

Parameter	Type	Description
id	String	Specifies the backend server ID. NOTE The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.
tenant_id	String	Specifies the ID of the project where the backend server is used. The value contains a maximum of 255 characters.
name	String	Specifies the backend server name. The value contains a maximum of 255 characters.

Parameter	Type	Description
address	String	<p>Specifies the private IP address of the backend server. This IP address must be in the subnet specified by subnet_id.</p> <p>This parameter can be set only to the IP address of the primary NIC, for example, 192.168.3.11.</p> <p>The value contains a maximum of 64 characters.</p>
protocol_port	Integer	<p>Specifies the port used by the backend server. The port number ranges from 1 to 65535.</p>
subnet_id	String	<p>Specifies the ID of the subnet where the backend server resides. The private IP address of the backend server is in this subnet.</p> <p>IPv6 subnets are not supported.</p>
admin_state_up	Boolean	<p>Specifies the administrative status of the backend server.</p> <p>This parameter is reserved. The value can be true or false.</p> <ul style="list-style-type: none">• true: Enabled• false: Disabled
weight	Integer	<p>Specifies the backend server weight. The value ranges from 0 to 100.</p> <p>If the value is 0, the backend server will not accept new requests. The default value is 1.</p>
operating_status	String	<p>Specifies the health check result of the backend server. The value can be one of the following:</p> <ul style="list-style-type: none">• ONLINE: The backend server is running normally.• NO_MONITOR: No health check is configured for the backend server group that the backend server belongs to.• OFFLINE: The cloud server used as the backend server is stopped or does not exist.

Example Request

- Adding a backend server

Obtain the values of **subnet_id** and **ip_address** by querying the subnet ID and IP address of the server associated with the load balancer.

Alternatively, query the subnet ID and IP address using the server ID. **device_id** in the request indicates the server ID. Obtain the values of **subnet_id** and **ip_address** of the primary NIC (the port for which **primary_interface** is **true**) in the response body.

POST <https://{{Endpoint}}/v2/145483a5107745e9b3d80f956713e6a3/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members>

```
{
  "member": {
    "subnet_id": "33d8b01a-bbe6-41f4-bc45-78a1d284d503",
    "protocol_port": 88,
    "name": "member-jy-tt-1",
    "address": "192.168.44.11"
  }
}
```

Example Response

- Example response

```
{
  "member": {
    "name": "member-jy-tt-1",
    "weight": 1,
    "admin_state_up": true,
    "subnet_id": "33d8b01a-bbe6-41f4-bc45-78a1d284d503",
    "tenant_id": "145483a5107745e9b3d80f956713e6a3",

    "address": "192.168.44.11",
    "protocol_port": 88,
    "operating_status": "ONLINE",
    "id": "c0042496-e220-44f6-914b-e6ca33bab503"
  }
}
```

Status Code

For details, see [Status Codes](#).

5.3.2 Querying Backend Servers

Function

This API is used to query backend servers in a specific backend server group. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

URI

GET [/v2/{project_id}/elb/pools/{pool_id}/members](#)

Table 5-79 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 5-80 Query parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the backend server from which pagination query starts, that is, the ID of the last backend server on the previous page. If this parameter is not specified, the first page will be queried. This parameter must be used together with limit .
limit	No	Integer	Specifies the number of backend servers on each page. If this parameter is not set, all backend servers are queried by default.
page_reverse	No	Boolean	Specifies the page direction. The value can be true or false , and the default value is false . The last page in the list requested with page_reverse set to false will not contain the "next" link, and the last page in the list requested with page_reverse set to true will not contain the "previous" link. This parameter must be used together with limit .
id	No	String	Specifies the backend server ID. NOTE The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.

Parameter	Mandatory	Type	Description
tenant_id	No	String	Specifies the ID of the project where the backend server is used. The value contains a maximum of 255 characters.
name	No	String	Specifies the backend server name. The value contains a maximum of 255 characters. NOTE The value of this parameter is not the name of server. It is the name automatically generated for the backend server associated with the load balancer.
address	No	String	Specifies the private IP address of the backend server. The value contains a maximum of 64 characters.
protocol_port	No	Integer	Specifies the port used by the backend server.
subnet_id	No	String	Specifies the ID of the subnet where the backend server resides.
admin_state_up	No	Boolean	Specifies the administrative status of the backend server. This parameter is reserved, and the default value is true .
weight	No	Integer	Specifies the backend server weight.
enterprise_project_id	No	String	Specifies the enterprise project ID. <ul style="list-style-type: none"> If enterprise_project_id is not passed, resources in all enterprise projects are queried by default. Fine-grained authorization is performed. The elb:*list permissions must be assigned to the user group. If enterprise_project_id is passed, the value can be a specific enterprise project ID or all_granted_eps. If the value is a specific enterprise project ID, only resources in the enterprise project are queried. If the value is all_granted_eps, resources in the enterprise projects with the elb:*list permissions are queried.

Request

None

Response

Table 5-81 Parameter description

Parameter	Type	Description
members	Array of Members objects	Lists backend servers in the backend server group. For details, see Table 5-82 .

Table 5-82 members parameter description

Parameter	Type	Description
id	String	Specifies the backend server ID. NOTE The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.
tenant_id	String	Specifies the ID of the project where the backend server is used. The value contains a maximum of 255 characters.
name	String	Specifies the backend server name. The value contains a maximum of 255 characters.
address	String	Specifies the private IP address of the backend server. This IP address must be in the subnet specified by subnet_id . This parameter can be set only to the IP address of the primary NIC, for example, 192.168.3.11. The value contains a maximum of 64 characters.
protocol_port	Integer	Specifies the port used by the backend server. The port number ranges from 1 to 65535.
subnet_id	String	Specifies the ID of the subnet where the backend server resides. The private IP address of the backend server is in this subnet. IPv6 subnets are not supported.

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the backend server. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">• true: Enabled• false: Disabled
weight	Integer	Specifies the backend server weight. The value ranges from 0 to 100 . If the value is 0 , the backend server will not accept new requests. The default value is 1 .
operating_status	String	Specifies the health check result of the backend server. The value can be one of the following: <ul style="list-style-type: none">• ONLINE: The backend server is running normally.• NO_MONITOR: No health check is configured for the backend server group that the backend server belongs to.• OFFLINE: The cloud server used as the backend server is stopped or does not exist.

Example Request

- Example request 1: Querying all backend servers
GET https://{Endpoint}/v2/1a3e005cf9ce40308c900bcb08e5320c/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members
- Example request 2: Querying the backend cloud server whose IP address is 10.0.0.8 and port number is 80
GET https://{Endpoint}/v2/1a3e005cf9ce40308c900bcb08e5320c/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members?address=10.0.0.8&protocol_port=80

Example Response

- Example response 1

```
{
  "members": [
    {
      "address": "10.0.0.8",
      "admin_state_up": true,
      "id": "9a7aff27-fd41-4ec1-ba4c-3eb92c629313",
      "protocol_port": 80,
      "subnet_id": "013d3059-87a4-45a5-91e9-d721068ae0b2",
      "tenant_id": "1a3e005cf9ce40308c900bcb08e5320c",
      "weight": 1,
      "operating_status": "ONLINE",
      "name": "member-name"
    }
  ]
}
```
- Example response 2

```
{
  "members": [
    {
      "address": "10.0.0.8",
      "admin_state_up": true,
      "id": "9a7aff27-fd41-4ec1-ba4c-3eb92c629313",
      "protocol_port": 80,
      "subnet_id": "013d3059-87a4-45a5-91e9-d721068ae0b2",
      "tenant_id": "1a3e005cf9ce40308c900bcb08e5320c",

      "weight": 1,
      "operating_status": "ONLINE",
      "name": "member-name"
    }
  ]
}
```

Status Code

For details, see [Status Codes](#).

5.3.3 Querying Details of a Backend Server

Function

This API is used to query details of a backend server.

URI

GET /v2/{project_id}/elb/pools/{pool_id}/members/{member_id}

Table 5-83 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
pool_id	Yes	String	Specifies the ID of the backend server group.
member_id	Yes	String	Specifies the backend server ID. NOTE <ul style="list-style-type: none">The value of this parameter is not the ID of the server. It is an ID automatically generated for the backend server that is associated with the load balancer.You can obtain this value by calling the API described in Querying Backend Servers.

Request

None

Response

Table 5-84 Parameter description

Parameter	Type	Description
member	Member object	Specifies the backend server. For details, see Table 5-85 .

Table 5-85 member parameter description

Parameter	Type	Description
id	String	Specifies the backend server ID. NOTE The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.
tenant_id	String	Specifies the ID of the project where the backend server is used. The value contains a maximum of 255 characters.
name	String	Specifies the backend server name. The value contains a maximum of 255 characters.
address	String	Specifies the private IP address of the backend server. This IP address must be in the subnet specified by subnet_id . This parameter can be set only to the IP address of the primary NIC, for example, 192.168.3.11. The value contains a maximum of 64 characters.
protocol_port	Integer	Specifies the port used by the backend server. The port number ranges from 1 to 65535.
subnet_id	String	Specifies the ID of the subnet where the backend server resides. The private IP address of the backend server is in this subnet. IPv6 subnets are not supported.

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the backend server. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">• true: Enabled• false: Disabled
weight	Integer	Specifies the backend server weight. The value ranges from 0 to 100 . If the value is 0 , the backend server will not accept new requests. The default value is 1 .
operating_status	String	Specifies the health check result of the backend server. The value can be one of the following: <ul style="list-style-type: none">• ONLINE: The backend server is running normally.• NO_MONITOR: No health check is configured for the backend server group that the backend server belongs to.• OFFLINE: The cloud server used as the backend server is stopped or does not exist.

Example Request

- Example request: Querying details of a backend server
GET https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members/cf024846-7516-4e3a-b0fb-6590322c836f

Example Response

- Example response 1

```
{
  "member": {
    "name": "",
    "weight": 1,
    "admin_state_up": true,
    "subnet_id": "823d5866-6e30-45c2-9b1a-a1ebc3757fdb",
    "tenant_id": "145483a5107745e9b3d80f956713e6a3",
    "address": "192.172.3.100",
    "protocol_port": 8080,
    "operating_status": "ONLINE",
    "id": "e58f5bfa-0e46-4bc5-951c-8473d3e5f24a"
  }
}
```

Status Code

For details, see [Status Codes](#).

5.3.4 Updating a Backend Server

Function

This API is used to update a backend server. You can modify its name and weight. You can set a larger weight for backend servers that can receive more traffic.

Constraints

If the provisioning status of the associated load balancer is not **ACTIVE**, the backend server cannot be updated.

URI

PUT /v2/{project_id}/elb/pools/{pool_id}/members/{member_id}

Table 5-86 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
pool_id	Yes	String	Specifies the ID of the backend server group.
member_id	Yes	String	Specifies the backend server ID. NOTE <ul style="list-style-type: none">The value of this parameter is not the ID of the server. It is an ID automatically generated for the backend server that is associated with the load balancer.You can obtain this value by calling the API described in Querying Backend Servers.

Request

Table 5-87 Parameter description

Parameter	Mandatory	Type	Description
member	Yes	Member object	Specifies the backend server. For details, see Table 5-88 .

Table 5-88 member parameter description

Parameter	Mandatory	Type	Description
name	No	String	Specifies the backend server name. The value contains a maximum of 255 characters.
admin_state_up	No	Boolean	Specifies the administrative status of the backend server. This parameter is reserved, and the default value is true .
weight	No	Integer	Specifies the backend server weight. The value ranges from 0 to 100 . If the value is 0 , the backend server will not accept new requests. The default value is 1 .

Response

Table 5-89 Parameter description

Parameter	Type	Description
member	Member object	Specifies the backend server. For details, see Table 5-90 .

Table 5-90 member parameter description

Parameter	Type	Description
id	String	Specifies the backend server ID. NOTE The value of this parameter is not the ID of server. It is the ID automatically generated for the backend server associated with the load balancer.
tenant_id	String	Specifies the ID of the project where the backend server is used. The value contains a maximum of 255 characters.
name	String	Specifies the backend server name. The value contains a maximum of 255 characters.

Parameter	Type	Description
address	String	<p>Specifies the private IP address of the backend server. This IP address must be in the subnet specified by subnet_id.</p> <p>This parameter can be set only to the IP address of the primary NIC, for example, 192.168.3.11.</p> <p>The value contains a maximum of 64 characters.</p>
protocol_port	Integer	<p>Specifies the port used by the backend server. The port number ranges from 1 to 65535.</p>
subnet_id	String	<p>Specifies the ID of the subnet where the backend server resides. The private IP address of the backend server is in this subnet.</p> <p>IPv6 subnets are not supported.</p>
admin_state_up	Boolean	<p>Specifies the administrative status of the backend server.</p> <p>This parameter is reserved. The value can be true or false.</p> <ul style="list-style-type: none">• true: Enabled• false: Disabled
weight	Integer	<p>Specifies the backend server weight. The value ranges from 0 to 100.</p> <p>If the value is 0, the backend server will not accept new requests. The default value is 1.</p>
operating_status	String	<p>Specifies the health check result of the backend server. The value can be one of the following:</p> <ul style="list-style-type: none">• ONLINE: The backend server is running normally.• NO_MONITOR: No health check is configured for the backend server group that the backend server belongs to.• OFFLINE: The cloud server used as the backend server is stopped or does not exist.

Example Request

- Example request: Updating the name and weight of a backend server
PUT https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members/c0042496-e220-44f6-914b-e6ca33bab503

```
{
  "member": {
    "name": "member create test",
    "weight": 10
  }
}
```

Example Response

- Example response

```
{
  "member": {
    "name": "member-jy-tt-1",
    "weight": 1,
    "admin_state_up": true,
    "subnet_id": "33d8b01a-bbe6-41f4-bc45-78a1d284d503",
    "tenant_id": "145483a5107745e9b3d80f956713e6a3",
    "address": "192.168.44.11",
    "protocol_port": 88,
    "operating_status": "ONLINE",
    "id": "c0042496-e220-44f6-914b-e6ca33bab503"
  }
}
```

Status Code

For details, see [Status Codes](#).

5.3.5 Removing a Backend Server

Function

This API is used to remove a backend server by its ID.

Constraints

After you remove a backend server, new connections to this server will not be established. However, long connections that have been established will be maintained.

URI

DELETE /v2/{project_id}/elb/pools/{pool_id}/members/{member_id}

Table 5-91 Parameter description

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 <ul style="list-style-type: none">The value of this parameter is not the ID of the server. It is an ID automatically generated for the backend server that is associated with the load balancer.You can obtain this value by calling the API described in Querying Backend Servers.

Request

None

Response

None

Example Request

- Example request: Removing a backend server
DELETE https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/pools/5a9a3e9e-d1aa-448e-af37-a70171f2a332/members/cf024846-7516-4e3a-b0fb-6590322c836f

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

5.4 Health Check

5.4.1 Configuring a Health Check

Function

This API is used to configure a health check for a backend server group to check the status of backend servers. If the health check result is **OFFLINE**, backend servers are considered unhealthy. You need to check the server configuration.

Constraints

- The security groups must have rules that allow access by 100.125.0.0/16.
- If UDP is used for the health check, the protocol of the backend server group must be UDP.

URI

POST /v2/{project_id}/elb/healthmonitors

Table 5-92 Parameter description

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

Request

Table 5-93 Parameter description

Parameter	Mandatory	Type	Description
healthmonitor	Yes	Health monitor object	Specifies the health check. For details, see Table 5-94 .

Table 5-94 healthmonitor parameter description

Parameter	Mandatory	Type	Description
tenant_id	No	String	Specifies the ID of the project where the health check is performed. The value must be the same as the value of project_id in the token. The value contains a maximum of 255 characters.
name	No	String	Specifies the health check name. The value contains a maximum of 255 characters.

Parameter	Mandatory	Type	Description
delay	Yes	Integer	Specifies the maximum time between health checks in the unit of second. The value ranges from 1 to 50 .
max_retries	Yes	Integer	Specifies the maximum number of retries. The value ranges from 1 to 10 .
pool_id	Yes	String	Specifies the ID of the backend server group. Only one health check can be configured for each backend server group.
admin_state_up	No	Boolean	Specifies the administrative status of the health check. This parameter is reserved, and the default value is true .
timeout	Yes	Integer	Specifies the health check timeout duration in the unit of second. The value ranges from 1 to 50 . NOTE You are advised to set the value less than that of parameter delay .
type	Yes	String	Specifies the health check protocol. The value can be TCP , UDP_CONNECT , or HTTP .
monitor_port	No	Integer	Specifies the health check port. The port number ranges from 1 to 65535. The value is left blank by default, indicating that the port of the backend server is used as the health check port.

Parameter	Mandatory	Type	Description
domain_name	No	String	<p>Specifies the domain name of HTTP requests during the health check.</p> <p>This parameter takes effect only when the value of type is set to HTTP.</p> <p>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example, www.test.com.</p> <p>The value contains a maximum of 100 characters.</p>
url_path	No	String	<p>Specifies the HTTP request path for the health check. The default value is /.</p> <p>The value starts with a slash (/).</p> <p>This parameter takes effect only when the value of type is set to HTTP.</p> <p>An example value is /test.</p> <p>The value contains a maximum of 80 characters.</p>

Parameter	Mandatory	Type	Description
expected_codes	No	String	<p>Specifies the expected HTTP status code. The following options are available:</p> <p>A single value, such as 200</p> <p>A list of values, such as 200,202</p> <p>A value range, such as 200-204</p> <p>This parameter takes effect only when the value of type is set to HTTP.</p> <p>The value contains a maximum of 64 characters.</p> <p>NOTE This parameter is reserved.</p>
http_method	No	String	<p>Specifies the HTTP request method. The default value is GET.</p> <p>The value can be GET, HEAD, POST, PUT, DELETE, TRACE, OPTIONS, CONNECT, or PATCH.</p> <p>This parameter takes effect only when the value of type is set to HTTP.</p> <p>NOTE This parameter is reserved.</p>

Response

Table 5-95 Parameter description

Parameter	Type	Description
healthmonitor	Healthmonit or object	Specifies the health check. For details, see Table 5-96 .

Table 5-96 healthmonitor parameter description

Parameter	Type	Description
id	String	Specifies the health check ID.

Parameter	Type	Description
tenant_id	String	Specifies the ID of the project where the health check is performed.
name	String	Specifies the health check name.
delay	Integer	Specifies the maximum time between health checks in the unit of second. The value ranges from 1 to 50 .
max_retries	Integer	Specifies the maximum number of retries. The value ranges from 1 to 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 .
pools	Array of Pools objects	Lists the IDs of backend server groups associated with the health check. For details, see Table 5-97 .
admin_state_up	Boolean	Specifies the administrative status of the health check. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">• true: Enabled• false: Disabled
timeout	Integer	Specifies the health check timeout duration in the unit of second. The value ranges from 1 to 50 . NOTE You are advised to set the value less than that of parameter delay .
type	String	Specifies the health check protocol. The value can be TCP , UDP_CONNECT , or HTTP .
monitor_port	Integer	Specifies the health check port. The port number ranges from 1 to 65535. The value is left blank by default, indicating that the port of the backend server is used as the health check port.

Parameter	Type	Description
expected_codes	String	<p>Specifies the expected HTTP status code. The following options are available:</p> <ul style="list-style-type: none"> A single value, such as 200 A list of values, such as 200,202 A value range, such as 200-204 <p>This parameter takes effect only when the value of type is set to HTTP.</p> <p>Currently, this parameter is not supported and is fixed at 200.</p>
domain_name	String	<p>Specifies the domain name of HTTP requests during the health check.</p> <p>This parameter takes effect only when the value of type is set to HTTP.</p> <p>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example: www.test.com.</p>
url_path	String	<p>Specifies the HTTP request path for the health check. The default value is /.</p> <p>The value starts with a slash (/).</p> <p>This parameter takes effect only when the value of type is set to HTTP.</p> <p>An example value is /test.</p>
http_method	String	<p>Specifies the HTTP request method. The default value is GET.</p> <p>The value can be GET, HEAD, POST, PUT, DELETE, TRACE, OPTIONS, CONNECT, or PATCH.</p> <p>This parameter takes effect only when the value of type is set to HTTP.</p> <p>NOTE This parameter is reserved.</p>

Table 5-97 pools parameter description

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

Example Request

- Example request: Configuring a health check
POST `https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/healthmonitors`

```
{
  "healthmonitor": {
    "admin_state_up": true,
    "pool_id": "bb44bffb-05d9-412c-9d9c-b189d9e14193",
    "domain_name": "www.test.com",
    "delay": 10,
    "max_retries": 10,
    "timeout": 10,
    "type": "HTTP"
  }
}
```

Example Response

- Example response 1

```
{
  "healthmonitor": {
    "name": "",
    "admin_state_up": true,
    "tenant_id": "145483a5107745e9b3d80f956713e6a3",
    "domain_name": "www.test.com",
    "delay": 10,
    "expected_codes": "200",
    "max_retries": 10,
    "http_method": "GET",
    "timeout": 10,
    "pools": [
      {
        "id": "bb44bffb-05d9-412c-9d9c-b189d9e14193"
      }
    ],
    "url_path": "/",
    "type": "HTTP",
    "id": "2dca3867-98c5-4cde-8f2c-b89ae6bd7e36",
    "monitor_port": 112
  }
}
```

Status Code

For details, see [Status Codes](#).

5.4.2 Querying Health Checks

Function

This API is used to query all the health checks. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

URI

GET `/v2/{project_id}/elb/healthmonitors`

Table 5-98 Path parameters

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

Table 5-99 Query parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the health check from which pagination query starts, that is, the ID of the last health check on the previous page. This parameter must be used together with limit .
limit	No	Integer	Specifies the number of health checks on each page. If this parameter is not set, all health checks are queried by default.
page_reverse	No	Boolean	Specifies the page direction. The value can be true or false , and the default value is false . The last page in the list requested with page_reverse set to false will not contain the "next" link, and the last page in the list requested with page_reverse set to true will not contain the "previous" link. This parameter must be used together with limit .
id	No	String	Specifies the health check ID.
tenant_id	No	String	Specifies the ID of the project where the health check is performed. The value contains a maximum of 255 characters.
name	No	String	Specifies the health check name. The value contains a maximum of 255 characters.
delay	No	Integer	Specifies the maximum time between health checks in the unit of second. The value ranges from 1 to 50 .

Parameter	Mandatory	Type	Description
max_retries	No	Integer	Specifies the number of consecutive health checks when the health check result of a backend server changes from OFFLINE to ONLINE . The value ranges from 1 to 10 .
admin_state_up	No	Boolean	Specifies the administrative status of the health check. The value can be true or false . The default value is true . <ul style="list-style-type: none"> • true: indicates that the health check function is enabled. • false: indicates that the health check function is disabled.
timeout	No	Integer	Specifies the health check timeout duration in the unit of second. The value ranges from 1 to 50 . NOTE You are advised to set the value less than that of parameter delay .
type	No	String	Specifies the health check protocol. The value can be TCP , UDP_CONNECT , or HTTP .
monitor_port	No	Integer	Specifies the port used for the health check. The value is left blank by default, indicating that the port of the backend server is used as the health check port.
expected_codes	No	String	Specifies the expected HTTP status code. The following options are available: A single value, such as 200 A list of values, such as 200,202 A value range, such as 200-204 This parameter takes effect only when the value of type is set to HTTP . The value contains a maximum of 64 characters. NOTE This parameter is reserved.

Parameter	Mandatory	Type	Description
domain_name	No	String	<p>Specifies the domain name of HTTP requests during the health check.</p> <p>This parameter takes effect only when the value of type is set to HTTP.</p> <p>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example: www.test.com.</p> <p>The value contains a maximum of 100 characters.</p>
url_path	No	String	<p>Specifies the HTTP request path for the health check. The default value is <code>/</code>.</p> <p>The value starts with a slash (/).</p> <p>This parameter takes effect only when the value of type is set to HTTP.</p> <p>An example value is <code>/test</code>.</p> <p>The value contains a maximum of 80 characters.</p>
http_method	No	String	<p>Specifies the HTTP request method. The default value is GET.</p> <p>The value can be GET, HEAD, POST, PUT, DELETE, TRACE, OPTIONS, CONNECT, or PATCH.</p> <p>This parameter takes effect only when the value of type is set to HTTP.</p> <p>NOTE This parameter is reserved.</p>

Request

None

Response

Table 5-100 Parameter description

Parameter	Type	Description
healthmonitors	Array of Healthmonitors objects	Lists the health checks. For details, see Table 5-101 .

Table 5-101 healthmonitor parameter description

Parameter	Type	Description
id	String	Specifies the health check ID.
tenant_id	String	Specifies the ID of the project where the health check is performed.
name	String	Specifies the health check name.
delay	Integer	Specifies the maximum time between health checks in the unit of second. The value ranges from 1 to 50 .
max_retries	Integer	Specifies the maximum number of retries. The value ranges from 1 to 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 .
pools	Array of Pools objects	Lists the IDs of backend server groups associated with the health check. For details, see Table 5-97 .
admin_state_up	Boolean	Specifies the administrative status of the health check. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">• true: Enabled• false: Disabled
timeout	Integer	Specifies the health check timeout duration in the unit of second. The value ranges from 1 to 50 . NOTE You are advised to set the value less than that of parameter delay .

Parameter	Type	Description
type	String	Specifies the health check protocol. The value can be TCP , UDP_CONNECT , or HTTP .
monitor_port	Integer	Specifies the health check port. The port number ranges from 1 to 65535. The value is left blank by default, indicating that the port of the backend server is used as the health check port.
expected_codes	String	Specifies the expected HTTP status code. The following options are available: A single value, such as 200 A list of values, such as 200,202 A value range, such as 200-204 This parameter takes effect only when the value of type is set to HTTP . Currently, this parameter is not supported and is fixed at 200 .
domain_name	String	Specifies the domain name of HTTP requests during the health check. This parameter takes effect only when the value of type is set to HTTP . The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests. The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example: www.test.com.
url_path	String	Specifies the HTTP request path for the health check. The default value is /. The value starts with a slash (/). This parameter takes effect only when the value of type is set to HTTP . An example value is /test .

Parameter	Type	Description
http_method	String	<p>Specifies the HTTP request method. The default value is GET.</p> <p>The value can be GET, HEAD, POST, PUT, DELETE, TRACE, OPTIONS, CONNECT, or PATCH.</p> <p>This parameter takes effect only when the value of type is set to HTTP.</p> <p>NOTE This parameter is reserved.</p>

Table 5-102 pools parameter description

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

Example Request

- Example request 1: Querying all health checks
GET https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/healthmonitors
- Example request 2: Querying HTTP health checks
GET https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/healthmonitors?type=HTTP

Example Response

- Example response 1


```

{
  "healthmonitors": [
    {
      "monitor_port": null,
      "name": "",
      "admin_state_up": true,
      "tenant_id": "601240b9c5c94059b63d484c92cfe308",

      "domain_name": null,
      "delay": 5,
      "expected_codes": "200",
      "max_retries": 3,
      "http_method": "GET",
      "timeout": 10,
      "pools": [
        {
          "id": "caef8316-6b65-4676-8293-cf41fb63cc2a"
        }
      ],
      "url_path": "/",
      "type": "HTTP",
      "id": "1b587819-d619-49c1-9101-fe72d8b361ef"
    }
  ]
}

```

- Example response 2

```
{
  "healthmonitors": [
    {
      "monitor_port": null,
      "name": "",
      "admin_state_up": true,
      "tenant_id": "601240b9c5c94059b63d484c92cfe308",

      "domain_name": null,
      "delay": 5,
      "expected_codes": "200",
      "max_retries": 3,
      "http_method": "GET",
      "timeout": 10,
      "pools": [
        {
          "id": "caef8316-6b65-4676-8293-cf41fb63cc2a"
        }
      ],
      "url_path": "/",
      "type": "HTTP",
      "id": "1b587819-d619-49c1-9101-fe72d8b361ef"
    }
  ]
}
```

Status Code

For details, see [Status Codes](#).

5.4.3 Querying Health Check Details

Function

This API is used to query details about a health check.

URI

GET /v2/{project_id}/elb/healthmonitors/{healthmonitor_id}

Table 5-103 Parameter description

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

Request

None

Response

Table 5-104 Parameter description

Parameter	Type	Description
healthmonitor	Healthmonit or object	Specifies the health check. For details, see Table 5-105 .

Table 5-105 healthmonitor parameter description

Parameter	Type	Description
id	String	Specifies the health check ID.
tenant_id	String	Specifies the ID of the project where the health check is performed.
name	String	Specifies the health check name.
delay	Integer	Specifies the maximum time between health checks in the unit of second. The value ranges from 1 to 50 .
max_retries	Integer	Specifies the maximum number of retries. The value ranges from 1 to 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 .
pools	Array of Pools objects	Lists the IDs of backend server groups associated with the health check. For details, see Table 5-97 .
admin_state_up	Boolean	Specifies the administrative status of the health check. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">● true: Enabled● false: Disabled
timeout	Integer	Specifies the health check timeout duration in the unit of second. The value ranges from 1 to 50 . NOTE You are advised to set the value less than that of parameter delay .
type	String	Specifies the health check protocol. The value can be TCP , UDP_CONNECT , or HTTP .

Parameter	Type	Description
monitor_port	Integer	Specifies the health check port. The port number ranges from 1 to 65535. The value is left blank by default, indicating that the port of the backend server is used as the health check port.
expected_codes	String	Specifies the expected HTTP status code. The following options are available: A single value, such as 200 A list of values, such as 200,202 A value range, such as 200-204 This parameter takes effect only when the value of type is set to HTTP . Currently, this parameter is not supported and is fixed at 200 .
domain_name	String	Specifies the domain name of HTTP requests during the health check. This parameter takes effect only when the value of type is set to HTTP . The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests. The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example: www.test.com.
url_path	String	Specifies the HTTP request path for the health check. The default value is / . The value starts with a slash (/). This parameter takes effect only when the value of type is set to HTTP . An example value is /test .
http_method	String	Specifies the HTTP request method. The default value is GET . The value can be GET, HEAD, POST, PUT, DELETE, TRACE, OPTIONS, CONNECT, or PATCH . This parameter takes effect only when the value of type is set to HTTP . NOTE This parameter is reserved.

Table 5-106 pools parameter description

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

Example Request

- Example request: Querying details of a health check
GET https://{endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/healthmonitors/
b7633ade-24dc-4d72-8475-06aa22be5412

Example Response

- Example response 1

```
{
  "healthmonitor": {
    "name": "",
    "admin_state_up": true,
    "tenant_id": "145483a5107745e9b3d80f956713e6a3",
    "domain_name": null,
    "delay": 10,
    "expected_codes": "200",
    "max_retries": 10,
    "http_method": "GET",
    "timeout": 10,
    "pools": [
      {
        "id": "bb44bffb-05d9-412c-9d9c-b189d9e14193"
      }
    ],
    "url_path": "/",
    "type": "HTTP",
    "id": "61c24cba-19bb-45c1-a013-7565e5f98872",
    "monitor_port": 112
  }
}
```

Status Code

For details, see [Status Codes](#).

5.4.4 Updating a Health Check

Function

This API is used to update a health check.

Constraints

If **provisioning_status** of the load balancer for which the health check is configured is not **ACTIVE**, the health check cannot be updated.

URI

PUT /v2/{project_id}/elb/healthmonitors/{healthmonitor_id}

Table 5-107 Parameter description

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

Request

Table 5-108 Parameter description

Parameter	Mandatory	Type	Description
healthmonitor	Yes	Healthmonitor object	Specifies the health check. For details, see Table 5-109 .

Table 5-109 healthmonitor parameter description

Parameter	Mandatory	Type	Description
name	No	String	Specifies the health check name. The value contains a maximum of 255 characters.
delay	No	Integer	Specifies the maximum time between health checks in the unit of second. The value ranges from 1 to 50 .
max_retries	No	Integer	Specifies the maximum number of retries. The value ranges from 1 to 10 .
admin_state_up	No	Boolean	Specifies the administrative status of the health check. This parameter is reserved, and the default value is true .
timeout	No	Integer	Specifies the health check timeout duration in the unit of second. The value ranges from 1 to 50 . NOTE You are advised to set the value less than that of parameter delay .
type	No	String	Specifies the health check protocol. The value can be TCP , UDP_CONNECT , or HTTP .

Parameter	Mandatory	Type	Description
monitor_port	No	Integer	Specifies the health check port. The port number ranges from 1 to 65535. The value is left blank by default, indicating that the port of the backend server is used as the health check port.
expected_codes	No	String	Specifies the expected HTTP status code. The following options are available: A single value, such as 200 A list of values, such as 200,202 A value range, such as 200-204 This parameter takes effect only when the value of type is set to HTTP .
domain_name	No	String	Specifies the domain name of HTTP requests during the health check. This parameter takes effect only when the value of type is set to HTTP . The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests. The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example: www.test.com. The value contains a maximum of 100 characters.
url_path	No	String	Specifies the HTTP request path for the health check. The default value is /. The value starts with a slash (/). This parameter takes effect only when the value of type is set to HTTP . An example value is /test . The value contains a maximum of 80 characters.

Parameter	Mandatory	Type	Description
http_method	No	String	<p>Specifies the HTTP request method. The default value is GET.</p> <p>The value can be GET, HEAD, POST, PUT, DELETE, TRACE, OPTIONS, CONNECT, or PATCH.</p> <p>This parameter takes effect only when the value of type is set to HTTP.</p> <p>NOTE This parameter is reserved.</p>

Response

Table 5-110 Parameter description

Parameter	Type	Description
healthmonitor	Healthmonitor object	Specifies the health check. For details, see Table 5-111 .

Table 5-111 healthmonitor parameter description

Parameter	Type	Description
id	String	Specifies the health check ID.
tenant_id	String	Specifies the ID of the project where the health check is performed.
name	String	Specifies the health check name.
delay	Integer	Specifies the maximum time between health checks in the unit of second. The value ranges from 1 to 50 .
max_retries	Integer	Specifies the maximum number of retries. The value ranges from 1 to 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 .
pools	Array of Pools objects	Lists the IDs of backend server groups associated with the health check. For details, see Table 5-97 .

Parameter	Type	Description
admin_state_up	Boolean	<p>Specifies the administrative status of the health check.</p> <p>This parameter is reserved. The value can be true or false.</p> <ul style="list-style-type: none"> • true: Enabled • false: Disabled
timeout	Integer	<p>Specifies the health check timeout duration in the unit of second. The value ranges from 1 to 50.</p> <p>NOTE You are advised to set the value less than that of parameter delay.</p>
type	String	<p>Specifies the health check protocol.</p> <p>The value can be TCP, UDP_CONNECT, or HTTP.</p>
monitor_port	Integer	<p>Specifies the health check port. The port number ranges from 1 to 65535.</p> <p>The value is left blank by default, indicating that the port of the backend server is used as the health check port.</p>
expected_codes	String	<p>Specifies the expected HTTP status code. The following options are available:</p> <p>A single value, such as 200</p> <p>A list of values, such as 200,202</p> <p>A value range, such as 200-204</p> <p>This parameter takes effect only when the value of type is set to HTTP.</p> <p>Currently, this parameter is not supported and is fixed at 200.</p>
domain_name	String	<p>Specifies the domain name of HTTP requests during the health check.</p> <p>This parameter takes effect only when the value of type is set to HTTP.</p> <p>The value is left blank by default, indicating that the private IP address of the load balancer is used as the destination address of HTTP requests.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter, for example: www.test.com.</p>

Parameter	Type	Description
url_path	String	Specifies the HTTP request path for the health check. The default value is /. The value starts with a slash (/). This parameter takes effect only when the value of type is set to HTTP . An example value is /test .
http_method	String	Specifies the HTTP request method. The default value is GET . The value can be GET, HEAD, POST, PUT, DELETE, TRACE, OPTIONS, CONNECT, or PATCH . This parameter takes effect only when the value of type is set to HTTP . NOTE This parameter is reserved.

Table 5-112 pools parameter description

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

Example Request

- Example request: Updating a health check
PUT https://{endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/healthmonitors/b7633ade-24dc-4d72-8475-06aa22be5412

```
{
  "healthmonitor": {
    "delay": 15,
    "name": "health-xx",
    "timeout": 12
  }
}
```

Example Response

- Example response

```
{
  "healthmonitor": {
    "name": "health-xx",
    "admin_state_up": true,
    "tenant_id": "145483a5107745e9b3d80f956713e6a3",
    "domain_name": null,
    "delay": 15,
    "expected_codes": "200",
    "max_retries": 10,
    "http_method": "GET",
  }
}
```

```
"timeout": 12,
"pools": [
  {
    "id": "bb44bffb-05d9-412c-9d9c-b189d9e14193"
  }
],
"url_path": "/",
"type": "HTTP",
"id": "2dca3867-98c5-4cde-8f2c-b89ae6bd7e36",
"monitor_port": 112
}
```

Status Code

For details, see [Status Codes](#).

5.4.5 Deleting a Health Check

Function

This API is used to delete a health check.

Constraints

If **provisioning_status** of the load balancer for which the health check is configured is not **ACTIVE**, the health check cannot be deleted.

URI

DELETE /v2/{project_id}/elb/healthmonitors/{healthmonitor_id}

Table 5-113 Parameter description

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

Request

None

Response

None

Example Request

- Example request: Deleting a health check
DELETE https://{Endpoint}/v2/145483a5107745e9b3d80f956713e6a3/elb/healthmonitors/
b7633ade-24dc-4d72-8475-06aa22be5412

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

5.5 Forwarding Policy

5.5.1 Adding a Forwarding Policy

Function

This API is used to add a forwarding policy. The listener and forwarding policy determine how traffic is forwarded to backend servers.

- By matching the URL or domain name specified in the forwarding policy when **action** is set to **REDIRECT_TO_POOL**, the load balancer distributes the traffic to backend servers in a specific backend server group.
- When **action** is set to **REDIRECT_TO_LISTENER**, the HTTP listener is redirected to an HTTPS listener, and requests are routed by the HTTPS listener.

Constraints

Currently, only redirects from an HTTP listener to an HTTPS listener are supported. When **action** is set to **REDIRECT_TO_LISTENER**, the listener specified by **listener_id** can only be an HTTP listener, and the listener specified by **redirect_listener_id** can only be an HTTPS listener.

The load balancer of the HTTPS listener to which traffic is redirected must be the same as that of the HTTP listener.

URI

POST /v2/{project_id}/elb/l7policies

Table 5-114 Parameter description

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

Request

Table 5-115 Parameter description

Parameter	Mandatory	Type	Description
l7policy	Yes	L7policy object	Specifies the forwarding policy. For details, see Table 5-116 .

Table 5-116 l7policy parameter description

Parameter	Mandatory	Type	Description
tenant_id	No	String	Specifies the ID of the project where the forwarding policy is used. The value must be the same as the value of project_id in the token. The value contains a maximum of 255 characters.
name	No	String	Specifies the forwarding policy name. The value contains a maximum of 255 characters.
admin_state_up	No	Boolean	Specifies the administrative status of the forwarding policy. The value can only be true .
description	No	String	Provides supplementary information about the forwarding policy. The value contains a maximum of 255 characters.
listener_id	Yes	String	Specifies the ID of the listener for which the forwarding policy is added. <ul style="list-style-type: none">When action is set to REDIRECT_TO_POOL, forwarding policies can be added to a listener with protocol set to HTTP or TERMINATED_HTTPS.When action is set to REDIRECT_TO_LISTENER, forwarding policies can be added to a listener with protocol set to HTTP.

Parameter	Mandatory	Type	Description
action	Yes	String	<p>Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener. The value can be:</p> <ul style="list-style-type: none"> • REDIRECT_TO_POOL: Requests are forwarded to the backend server group specified by redirect_pool_id. • REDIRECT_TO_LISTENER: Requests are redirected from the HTTP listener specified by listener_id to the HTTPS listener specified by redirect_listener_id.
redirect_pool_id	No	String	<p>Specifies the ID of the backend server group to which traffic is forwarded. The default value is null.</p> <p>This parameter is mandatory when action is set to REDIRECT_TO_POOL.</p> <p>This parameter cannot be specified when action is set to REDIRECT_TO_LISTENER.</p> <p>The backend server group must meet the following requirements:</p> <ul style="list-style-type: none"> • Cannot be the default backend server group of the listener. • Cannot be the backend server group used by forwarding policies of other listeners.
redirect_listener_id	No	String	<p>Specifies the ID of the listener to which the traffic is redirected. The default value is null.</p> <p>This parameter is mandatory when action is set to REDIRECT_TO_LISTENER.</p> <p>This parameter cannot be specified when action is set to REDIRECT_TO_POOL. The listener must meet the following requirements:</p> <ul style="list-style-type: none"> • Can only be an HTTPS listener. • Can only be a listener of the same load balancer.

Parameter	Mandatory	Type	Description
redirect_url	No	String	Specifies the URL to which traffic is redirected. The default value is null . This parameter is reserved. The value contains a maximum of 255 characters.
position	No	Integer	Specifies the forwarding priority. The value ranges from 1 to 100 . The default value is 100 . This parameter is reserved.
rules	No	Array of Rules objects	Lists the forwarding rules of the forwarding policy. For details, see Table 5-117 . The list contains a maximum of two rules, and the type parameter of each rule must be unique.

Table 5-117 rules parameter description

Parameter	Type	Mandatory	Description
admin_state_up	Boolean	No	Specifies the administrative status of the forwarding rule. The value can only be true .
type	String	Yes	Specifies the match type of a forwarding rule. The value can be: <ul style="list-style-type: none"> ● HOST_NAME: matches the domain name in the request. ● PATH: matches the path in the request. The match type of forwarding rules in a forwarding policy must be unique.

Parameter	Type	Mandatory	Description
compare_type	String	Yes	<p>Specifies the match mode. The options are as follows:</p> <p>When type is set to HOST_NAME, the value of this parameter can only be the following:</p> <ul style="list-style-type: none"> • EQUAL_TO: indicates exact match. <p>When type is set to PATH, the value of this parameter can be one of the following:</p> <ul style="list-style-type: none"> • REGEX: indicates regular expression match. • STARTS_WITH: indicates prefix match. • EQUAL_TO: indicates exact match.
invert	Boolean	No	<p>Specifies whether reverse matching is supported.</p> <p>The value can be true or false. The default value is false.</p> <p>This parameter is reserved.</p>
key	String	No	<p>Specifies the key of the match content. The default value is null.</p> <p>This parameter is reserved.</p>
value	String	Yes	<p>Specifies the value of the match content. The value cannot contain spaces.</p> <ul style="list-style-type: none"> • When type is set to HOST_NAME, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit. • When type is set to PATH, the value can contain a maximum of 128 characters. When compare_type is set to STARTS_WITH or EQUAL_TO, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~!;@^-%#&\$.*+?,=!: \() [] {}</code>

Response

Table 5-118 Parameter description

Parameter	Type	Description
l7policy	L7policy object	Specifies the forwarding policy. For details, see Table 5-119 .

Table 5-119 l7policy parameter description

Parameter	Type	Description
id	String	Specifies the forwarding policy ID.
tenant_id	String	Specifies the ID of the project where the forwarding policy is used.
name	String	Specifies the forwarding policy name.
admin_state_up	Boolean	Specifies the administrative status of the forwarding policy. The value can only be true .
description	String	Provides supplementary information about the forwarding policy.
listener_id	String	Specifies the ID of the listener to which the forwarding policy is added.
action	String	Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener. The value can be: <ul style="list-style-type: none">• REDIRECT_TO_POOL: Requests are forwarded to the backend server group specified by redirect_pool_id.• REDIRECT_TO_LISTENER: Requests are redirected from the HTTP listener specified by listener_id to the HTTPS listener specified by redirect_listener_id.
redirect_pool_id	String	Specifies the ID of the backend server group to which traffic is forwarded.
redirect_listener_id	String	Specifies the ID of the listener to which the traffic is redirected.
redirect_url	String	Specifies the URL to which traffic is redirected. This parameter is reserved.
rules	Array of Rules objects	Lists the forwarding rules of the forwarding policy. For details, see Table 5-120 .

Parameter	Type	Description
position	Integer	Specifies the forwarding priority. The value ranges from 1 to 100 . The default value is 100 . This parameter is reserved.
provisioning_status	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the forwarding policy.

Table 5-120 rules parameter description

Parameter	Type	Description
id	String	Specifies the ID of the associated forwarding rule.

Example Request

- Example request 1: Adding a forwarding policy

POST https://{Endpoint}/v2/573d73c9f90e48d0bddfa0eb202b25c2/elb/l7policies

```
{
  "l7policy": {
    "name": "niubiao_yaqing_api-2",
    "listener_id": "3e24a3ca-11e5-4aa3-abd4-61ba0a8a18f1",
    "action": "REDIRECT_TO_POOL",
    "redirect_pool_id": "6460f13a-76de-43c7-b776-4fefc06a676e",
    "rules": [
      {
        "type": "PATH",
        "compare_type": "EQUAL_TO",
        "value": "/test"
      },
      {
        "type": "HOST_NAME",
        "compare_type": "EQUAL_TO",
        "value": "www.test.com"
      }
    ]
  }
}
```

- Example request 2: Creating a redirect

POST https://{Endpoint}/v2/573d73c9f90e48d0bddfa0eb202b25c2/elb/l7policies

```
{
  "l7policy": {
    "action": "REDIRECT_TO_LISTENER",
    "listener_id": "4ef8553e-9ef7-4859-a42d-919feaf89d60",
    "redirect_listener_id": "3ee10199-a7b4-4784-93cd-857afe9d0890",
    "name": "redirect-test"
  }
}
```

Example Response

- Example response 1

```
{
  "l7policy": {
    "redirect_pool_id": "6460f13a-76de-43c7-b776-4fefc06a676e",
    "description": "",
    "admin_state_up": true,
    "rules": [
      {
        "id": "742600d9-2a14-4808-af69-336883dbb590"
      },
      {
        "id": "3251ed77-0d52-412b-9310-733636bb3fbf"
      }
    ],
    "tenant_id": "573d73c9f90e48d0bddfa0eb202b25c2",
    "listener_id": "3e24a3ca-11e5-4aa3-abd4-61ba0a8a18f1",
    "redirect_url": null,
    "redirect_listener_id": null,
    "action": "REDIRECT_TO_POOL",
    "position": 100,
    "provisioning_status": "ACTIVE",

    "id": "65d6e115-f179-4bcd-9bbb-1484e5f8ee81",
    "name": "niubiao_yaqing-_api-2"
  }
}
```

- Example response 2

```
{
  "l7policy": {
    "redirect_pool_id": null,
    "description": "",
    "admin_state_up": true,
    "rules": [ ],
    "tenant_id": "573d73c9f90e48d0bddfa0eb202b25c2",
    "listener_id": "4ef8553e-9ef7-4859-a42d-9199feaf89d60",
    "redirect_url": null,
    "redirect_listener_id": "3ee10199-a7b4-4784-93cd-857afe9d0890",
    "action": "REDIRECT_TO_LISTENER",
    "position": 100,
    "provisioning_status": "ACTIVE",

    "id": "bc4e4338-480f-4a98-8245-5bb1964f0e1d",
    "name": "redirect-test"
  }
}
```

Status Code

For details, see [Status Codes](#).

5.5.2 Querying Forwarding Policies

Function

This API is used to query all the forwarding policies. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

URI

GET /v2/{project_id}/elb/l7policies

Table 5-121 Path parameters

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

Table 5-122 Query parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the forwarding policy from which pagination query starts, that is, the ID of the last forwarding policy on the previous page. This parameter must be used together with limit .
limit	No	Integer	Specifies the number of forwarding policies on each page. If this parameter is not set, all forwarding policies are queried by default.
page_reverse	No	Boolean	Specifies the page direction. The value can be true or false , and the default value is false . The last page in the list requested with page_reverse set to false will not contain the "next" link, and the last page in the list requested with page_reverse set to true will not contain the "previous" link. This parameter must be used together with limit .
id	No	String	Specifies the forwarding policy ID.
tenant_id	No	String	Specifies the ID of the project where the forwarding policy is used. The value contains a maximum of 255 characters.
name	No	String	Specifies the forwarding policy name. The value contains a maximum of 255 characters.
admin_state_up	No	Boolean	Specifies the administrative status of the forwarding policy.

Parameter	Mandatory	Type	Description
description	No	String	Provides supplementary information about the forwarding policy. The value contains a maximum of 255 characters.
listener_id	No	String	Specifies the ID of the listener to which the forwarding policy is added.
action	No	String	Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener. The value can be: <ul style="list-style-type: none">• REDIRECT_TO_POOL: Requests are forwarded to the backend server group specified by redirect_pool_id.• REDIRECT_TO_LISTENER: Requests are redirected from the HTTP listener specified by listener_id to the HTTPS listener specified by redirect_listener_id.
redirect_pool_id	No	String	Specifies the ID of the backend server group to which traffic is forwarded.
redirect_listener_id	No	String	Specifies the ID of the listener to which the traffic is redirected.
redirect_url	No	String	Specifies the URL to which traffic is redirected. This parameter is reserved. The value contains a maximum of 255 characters.
position	No	Integer	Specifies the forwarding priority. The value ranges from 1 to 100 . The default value is 100 . This parameter is reserved.
provisioning_status	No	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the forwarding policy.

Parameter	Mandatory	Type	Description
enterprise_project_id	No	String	<p>Specifies the enterprise project ID. Enterprise projects are used for fine-grained authentication.</p> <ul style="list-style-type: none">• If listener_id is passed, the ID of the enterprise project to which the load balancer belongs is used for authentication.• If listener_id is not passed, the ID of the enterprise project to which the forwarding policy belongs is used for authentication.• If neither listener_id nor enterprise_project_id is passed, fine-grained authentication is performed. The elb:loadbalancers:list permissions must be assigned to the user group.

Request

None

Response

Table 5-123 Response parameters

Parameter	Type	Description
l7policies	Array of L7policies objects	Lists the forwarding policies. For details, see Table 5-124 .

Table 5-124 l7policy parameter description

Parameter	Type	Description
id	String	Specifies the forwarding policy ID.
tenant_id	String	Specifies the ID of the project where the forwarding policy is used.
name	String	Specifies the forwarding policy name.

Parameter	Type	Description
admin_state_up	Boolean	Specifies the administrative status of the forwarding policy. The value can only be true .
description	String	Provides supplementary information about the forwarding policy.
listener_id	String	Specifies the ID of the listener to which the forwarding policy is added.
action	String	Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener. The value can be: <ul style="list-style-type: none">• REDIRECT_TO_POOL: Requests are forwarded to the backend server group specified by redirect_pool_id.• REDIRECT_TO_LISTENER: Requests are redirected from the HTTP listener specified by listener_id to the HTTPS listener specified by redirect_listener_id.
redirect_pool_id	String	Specifies the ID of the backend server group to which traffic is forwarded.
redirect_listener_id	String	Specifies the ID of the listener to which the traffic is redirected.
redirect_url	String	Specifies the URL to which traffic is redirected. This parameter is reserved.
rules	Array of Rules objects	Lists the forwarding rules of the forwarding policy. For details, see Table 5-120 .
position	Integer	Specifies the forwarding priority. The value ranges from 1 to 100 . The default value is 100 . This parameter is reserved.
provisioning_status	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the forwarding policy.

Table 5-125 rules parameter description

Parameter	Type	Description
id	String	Specifies the ID of the associated forwarding rule.

Example Request

- Example request 1: Querying all forwarding policies
GET https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies
- Example request 2: Querying forwarding policies through which requests are forwarded to the backend server group
GET https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies?
action=REDIRECT_TO_POOL

Example Response

- Example response 1

```
{
  "l7policies": [
    {
      "redirect_pool_id": "431a03eb-81bb-408e-ae37-7ce19023692b",
      "redirect_listener_id": null,
      "description": "",
      "admin_state_up": true,
      "rules": [
        {
          "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
        },
        {
          "id": "f02b3bca-69d2-4335-a3fa-a8054e996213"
        }
      ]
    },
    {
      "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
      "listener_id": "26058b64-6185-4e06-874e-4bd68b7633d0",
      "redirect_url": null,
      "action": "REDIRECT_TO_POOL",
      "position": 2,
      "provisioning_status": "ACTIVE",
      "id": "5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586",
      "name": ""
    },
    {
      "redirect_pool_id": "59eebd7b-c68f-4f8a-aa7f-e062e84c0690",
      "redirect_listener_id": null,
      "description": "",
      "admin_state_up": true,
      "rules": [
        {
          "id": "f4499f48-de3d-4efe-926d-926aa4d6aaf5"
        }
      ]
    },
    {
      "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
      "listener_id": "e1310063-00de-4867-ab55-ccac4d9db364",
      "redirect_url": null,
      "action": "REDIRECT_TO_POOL",
      "position": 1,
      "provisioning_status": "ACTIVE",
      "id": "6cfd9d89-1d7e-4d84-ae1f-a8c5ff126f72",
      "name": ""
    }
  ]
}
```

- Example response 2

```
{
  "l7policies": [
    {
      "redirect_pool_id": "431a03eb-81bb-408e-ae37-7ce19023692b",
      "redirect_listener_id": null,
      "description": "",

```

```
"admin_state_up": true,
"rules": [
  {
    "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
  },
  {
    "id": "f02b3bca-69d2-4335-a3fa-a8054e996213"
  }
],
"tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
"listener_id": "26058b64-6185-4e06-874e-4bd68b7633d0",
"redirect_url": null,
"action": "REDIRECT_TO_POOL",
"position": 2,
"provisioning_status": "ACTIVE",
"id": "5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586",
"name": ""
},
{
  "redirect_pool_id": "59eebd7b-c68f-4f8a-aa7f-e062e84c0690",
  "redirect_listener_id": null,
  "description": "",
  "admin_state_up": true,
  "rules": [
    {
      "id": "f4499f48-de3d-4efe-926d-926aa4d6aaf5"
    }
  ],
  "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
  "listener_id": "e1310063-00de-4867-ab55-ccac4d9db364",
  "redirect_url": null,
  "action": "REDIRECT_TO_POOL",
  "position": 1,
  "provisioning_status": "ACTIVE",
  "id": "6cfd9d89-1d7e-4d84-ae1f-a8c5ff126f72",
  "name": ""
}
]
}
```

Status Code

For details, see [Status Codes](#).

5.5.3 Querying Details of a Forwarding Policy

Function

This API is used to query details about a forwarding policy.

URI

GET /v2/{project_id}/elb/l7policies/{l7policy_id}

Table 5-126 Parameter description

Parameter	Mandator y	Type	Description
project_id	Yes	Strin g	Specifies the project ID.

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

Request

None

Response

Table 5-127 Parameter description

Parameter	Type	Description
l7policy	L7policy object	Specifies the forwarding policy. For details, see Table 5-128 .

Table 5-128 l7policy parameter description

Parameter	Type	Description
id	String	Specifies the forwarding policy ID.
tenant_id	String	Specifies the ID of the project where the forwarding policy is used.
name	String	Specifies the forwarding policy name.
admin_state_up	Boolean	Specifies the administrative status of the forwarding policy. The value can only be true .
description	String	Provides supplementary information about the forwarding policy.
listener_id	String	Specifies the ID of the listener to which the forwarding policy is added.
action	String	Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener. The value can be: <ul style="list-style-type: none"> • REDIRECT_TO_POOL: Requests are forwarded to the backend server group specified by redirect_pool_id. • REDIRECT_TO_LISTENER: Requests are redirected from the HTTP listener specified by listener_id to the HTTPS listener specified by redirect_listener_id.

Parameter	Type	Description
redirect_pool_id	String	Specifies the ID of the backend server group to which traffic is forwarded.
redirect_listener_id	String	Specifies the ID of the listener to which the traffic is redirected.
redirect_url	String	Specifies the URL to which traffic is redirected. This parameter is reserved.
rules	Array of Rules objects	Lists the forwarding rules of the forwarding policy. For details, see Table 5-120 .
position	Integer	Specifies the forwarding priority. The value ranges from 1 to 100 . The default value is 100 . This parameter is reserved.
provisioning_status	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the forwarding policy.

Table 5-129 rules parameter description

Parameter	Type	Description
id	String	Specifies the ID of the associated forwarding rule.

Example Request

- Example request: Querying details of a forwarding policy
GET https://[Endpoint]/v2/a31d2bdcf7604c0faadbb058e1e08819/elb/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586

Example Response

- Example response 1


```
{
  "l7policy": {
    "redirect_pool_id": "431a03eb-81bb-408e-ae37-7ce19023692b",
    "redirect_listener_id": null,
    "description": "",
    "admin_state_up": true,
    "rules": [
      {
        "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
      },
      {
        "id": "f02b3bca-69d2-4335-a3fa-a8054e996213"
      }
    ]
  }
}
```



```
"tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
"listener_id": "26058b64-6185-4e06-874e-4bd68b7633d0",
"redirect_url": null,
"provisioning_status": "ACTIVE",
"action": "REDIRECT_TO_POOL",
"position": 1,
"id": "5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586",
"name": "l7policy-garry-1"
}
```

Status Code

For details, see [Status Codes](#).

5.5.4 Updating a Forwarding Policy

Function

This API is used to update a forwarding policy.

URI

PUT /v2/{project_id}/elb/l7policies/{l7policy_id}

Table 5-130 Parameter description

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

Request

Table 5-131 Parameter description

Parameter	Mandatory	Type	Description
l7policy	Yes	L7policy object	Specifies the forwarding policy. For details, see Table 5-132 .

Table 5-132 l7policy parameter description

Parameter	Mandatory	Type	Description
name	No	String	Specifies the forwarding policy name. The value contains a maximum of 255 characters.
description	No	String	Provides supplementary information about the forwarding policy. The value contains a maximum of 255 characters.
redirect_pool_id	No	String	Specifies the ID of the backend server group to which traffic is forwarded. The default value is null . This parameter is mandatory when action is set to REDIRECT_TO_POOL . This parameter cannot be specified when action is set to REDIRECT_TO_LISTENER . The backend server group must meet the following requirements: <ul style="list-style-type: none">• Cannot be the default backend server group of the listener.• Cannot be the backend server group used by forwarding policies of other listeners.
redirect_listener_id	No	String	Specifies the ID of the listener to which the traffic is redirected. The default value is null . This parameter is mandatory when action is set to REDIRECT_TO_LISTENER . This parameter cannot be specified when action is set to REDIRECT_TO_POOL . The listener must meet the following requirements: <ul style="list-style-type: none">• Can only be an HTTPS listener.• Can only be a listener of the same load balancer.
admin_state_up	No	Boolean	Specifies the administrative status of the forwarding policy. The value can only be true .

Response

Table 5-133 Parameter description

Parameter	Type	Description
l7policy	L7policy object	Specifies the forwarding policy. For details, see Table 5-134 .

Table 5-134 l7policy parameter description

Parameter	Type	Description
id	String	Specifies the forwarding policy ID.
tenant_id	String	Specifies the ID of the project where the forwarding policy is used.
name	String	Specifies the forwarding policy name.
admin_state_up	Boolean	Specifies the administrative status of the forwarding policy. The value can only be true .
description	String	Provides supplementary information about the forwarding policy.
listener_id	String	Specifies the ID of the listener to which the forwarding policy is added.
action	String	Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener. The value can be: <ul style="list-style-type: none">• REDIRECT_TO_POOL: Requests are forwarded to the backend server group specified by redirect_pool_id.• REDIRECT_TO_LISTENER: Requests are redirected from the HTTP listener specified by listener_id to the HTTPS listener specified by redirect_listener_id.
redirect_pool_id	String	Specifies the ID of the backend server group to which traffic is forwarded.
redirect_listener_id	String	Specifies the ID of the listener to which the traffic is redirected.
redirect_url	String	Specifies the URL to which traffic is redirected. This parameter is reserved.
rules	Array of Rules objects	Lists the forwarding rules of the forwarding policy. For details, see Table 5-120 .

Parameter	Type	Description
position	Integer	Specifies the forwarding priority. The value ranges from 1 to 100 . The default value is 100 . This parameter is reserved.
provisioning_status	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the forwarding policy.

Table 5-135 rules parameter description

Parameter	Type	Description
id	String	Specifies the ID of the associated forwarding rule.

Example Request

- Example request: Updating a forwarding policy
PUT <https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586>

```
{
  "l7policy": {
    "name": "test"
  }
}
```

Example Response

- Example response

```
{
  "l7policy": {
    "redirect_pool_id": "431a03eb-81bb-408e-ae37-7ce19023692b",
    "redirect_listener_id": null,
    "description": "",
    "admin_state_up": true,
    "rules": [
      {
        "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
      },
      {
        "id": "f02b3bca-69d2-4335-a3fa-a8054e996213"
      }
    ]
  },
  "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
  "listener_id": "26058b64-6185-4e06-874e-4bd68b7633d0",
  "redirect_url": null,
  "action": "REDIRECT_TO_POOL",
  "position": 2,
  "provisioning_status": "ACTIVE",
  "id": "5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586",
  "name": "test"
}
```

```
}  
}
```

Status Code

For details, see [Status Codes](#).

5.5.5 Deleting a Forwarding Policy

Function

This API is used to delete a forwarding policy.

URI

DELETE /v2/{project_id}/elb/l7policies/{l7policy_id}

Table 5-136 Parameter description

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

Request

None

Response

None

Example Request

- Example request: Deleting a forwarding policy
DELETE https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/
5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

5.6 Forwarding Rule

5.6.1 Adding a Forwarding Rule

Function

This API is used to add a forwarding rule. After you add a forwarding rule, the load balancer matches the domain name and path in the request and distributes the traffic to the backend server group specified by **redirect_pool_id** of the associated forwarding policy.

Constraints

The match type of forwarding rules in a forwarding policy must be unique.

URI

POST /v2/{project_id}/elb/l7policies/{l7policy_id}/rules

Table 5-137 Parameter description

Parameter	Mandator y	Type	Description
project_id	Yes	Strin g	Specifies the project ID.
l7policy_id	Yes	Strin g	Specifies the forwarding policy ID.

Request

Table 5-138 Parameter description

Parameter	Mandat ory	Type	Description
rule	Yes	Rule object	Specifies the forwarding rule. For details, see Table 5-139 .

Table 5-139 rule parameter description

Parameter	Mandatory	Type	Description
tenant_id	No	String	Specifies the ID of the project where the forwarding rule is used. The value must be the same as the value of project_id in the token. The value contains a maximum of 255 characters.
admin_state_up	No	Boolean	Specifies the administrative status of the forwarding rule. The value can only be true .
type	Yes	String	Specifies the match type of a forwarding rule. The value can be: <ul style="list-style-type: none">• HOST_NAME: matches the domain name in the request.• PATH: matches the path in the request. The match type of forwarding rules in a forwarding policy must be unique.
compare_type	Yes	String	Specifies the match mode. The options are as follows: When type is set to HOST_NAME , the value of this parameter can only be the following: <ul style="list-style-type: none">• EQUAL_TO: indicates exact match. When type is set to PATH , the value of this parameter can be one of the following: <ul style="list-style-type: none">• REGEX: indicates regular expression match.• STARTS_WITH: indicates prefix match.• EQUAL_TO: indicates exact match.
invert	No	Boolean	Specifies whether reverse matching is supported. The value can be true or false . The default value is false . This parameter is reserved.

Parameter	Mandatory	Type	Description
key	No	String	Specifies the key of the match content. The default value is null . This parameter is reserved. The value contains a maximum of 255 characters.
value	Yes	String	Specifies the value of the match content. The value cannot contain spaces. The value contains a maximum of 128 characters. <ul style="list-style-type: none"> When type is set to HOST_NAME, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit. When type is set to PATH, the value can contain a maximum of 128 characters. When compare_type is set to STARTS_WITH or EQUAL_TO, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+?,=!: \()[]{}</code>

Response

Table 5-140 Parameter description

Parameter	Type	Description
rule	Rule object	Specifies the forwarding rule. For details, see Table 5-141 .

Table 5-141 rule parameter description

Parameter	Type	Description
id	String	Specifies the forwarding rule ID.

Parameter	Type	Description
tenant_id	String	Specifies the ID of the project where the forwarding rule is used. The value contains a maximum of 255 characters.
admin_state_up	Boolean	Specifies the administrative status of the forwarding rule. The value can only be true .
type	String	Specifies the match type of a forwarding rule. The value can be: <ul style="list-style-type: none">• HOST_NAME: matches the domain name in the request.• PATH: matches the path in the request.
compare_type	String	Specifies the match mode. The options are as follows: When type is set to HOST_NAME , the value of this parameter can only be the following: <ul style="list-style-type: none">• EQUAL_TO: indicates exact match. When type is set to PATH , the value of this parameter can be one of the following: <ul style="list-style-type: none">• REGEX: indicates regular expression match.• STARTS_WITH: indicates prefix match.• EQUAL_TO: indicates exact match.
invert	Boolean	Specifies whether reverse matching is supported. The value can be true or false . The default value is false . This parameter is reserved.
key	String	Specifies the key of the match content. The default value is null . This parameter is reserved. The value contains a maximum of 255 characters.

Parameter	Type	Description
value	String	Specifies the value of the match content. The value contains a maximum of 128 characters. <ul style="list-style-type: none">When type is set to HOST_NAME, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.When type is set to PATH, the value can contain a maximum of 128 characters. When compare_type is set to STARTS_WITH or EQUAL_TO, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^--%#&\$.*+?,=!: \() [] {}</code>
provisioning_status	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the forwarding rule.

Example Request

- Example request: Adding a forwarding rule
POST <https://{endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules>

```
{
  "rule": {
    "compare_type": "EQUAL_TO",
    "type": "PATH",
    "value": "/bbb.html"
  }
}
```

Example Response

- Example response

```
{
  "rule": {
    "compare_type": "EQUAL_TO",
    "admin_state_up": true,
    "provisioning_status": "ACTIVE",
    "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",

    "invert": false,
    "value": "/bbb.html",
    "key": null,
    "type": "PATH",
    "id": "c6f457b8-bf6f-45d7-be5c-a3226945b7b1"
  }
}
```

Status Code

For details, see [Status Codes](#).

5.6.2 Querying Forwarding Rules

Function

This API is used to query forwarding rules. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

Constraints

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

URI

GET /v2/{project_id}/elb/l7policies/{l7policy_id}/rules

Table 5-142 Path parameters

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

Table 5-143 Query parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the forwarding rule from which pagination query starts, that is, the ID of the last forwarding rule on the previous page. This parameter must be used together with limit .
limit	No	Integer	Specifies the number of forwarding rules on each page. If this parameter is not set, all forwarding rules are queried by default.

Parameter	Mandatory	Type	Description
page_reverse	No	Boolean	Specifies the page direction. The value can be true or false , and the default value is false . The last page in the list requested with page_reverse set to false will not contain the "next" link, and the last page in the list requested with page_reverse set to true will not contain the "previous" link. This parameter must be used together with limit .
id	No	String	Specifies the forwarding rule ID.
tenant_id	No	String	Specifies the ID of the project where the forwarding rule is used. The value contains a maximum of 255 characters.
admin_state_up	No	Boolean	Specifies the administrative status of the forwarding rule.
type	No	String	Specifies the match type of a forwarding rule. The value can be: <ul style="list-style-type: none"> • HOST_NAME: matches the domain name in the request. • PATH: matches the path in the request. The match type of forwarding rules in a forwarding policy must be unique.
compare_type	No	String	Specifies the match mode. The options are as follows: When type is set to HOST_NAME , the value of this parameter can only be the following: <ul style="list-style-type: none"> • EQUAL_TO: indicates exact match. When type is set to PATH , the value of this parameter can be one of the following: <ul style="list-style-type: none"> • REGEX: indicates regular expression match. • STARTS_WITH: indicates prefix match. • EQUAL_TO: indicates exact match.

Parameter	Mandatory	Type	Description
invert	No	Boolean	Specifies whether reverse matching is supported. The value can be true or false . The default value is false . This parameter is reserved.
key	No	String	Specifies the key of the match content. The default value is null . This parameter is reserved. The value contains a maximum of 255 characters.
value	No	String	Specifies the value of the match content. The value contains a maximum of 128 characters. <ul style="list-style-type: none"> When type is set to HOST_NAME, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit. When type is set to PATH, the value can contain a maximum of 128 characters. When compare_type is set to STARTS_WITH or EQUAL_TO, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+? ,=!: \() [] {}</code>
provisioning_status	No	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the forwarding rule.

Request

None

Response

Table 5-144 Parameter description

Parameter	Type	Description
rules	Array of Rules objects	Lists the forwarding rules. For details, see Table 5-145 .

Table 5-145 rules parameter description

Parameter	Type	Description
id	String	Specifies the forwarding rule ID.
tenant_id	String	Specifies the ID of the project where the forwarding rule is used. The value contains a maximum of 255 characters.
admin_state_up	Boolean	Specifies the administrative status of the forwarding rule. The value can only be true .
type	String	Specifies the match type of a forwarding rule. The value can be: <ul style="list-style-type: none">● HOST_NAME: matches the domain name in the request.● PATH: matches the path in the request.
compare_type	String	Specifies the match mode. The options are as follows: When type is set to HOST_NAME , the value of this parameter can only be the following: <ul style="list-style-type: none">● EQUAL_TO: indicates exact match. When type is set to PATH , the value of this parameter can be one of the following: <ul style="list-style-type: none">● REGEX: indicates regular expression match.● STARTS_WITH: indicates prefix match.● EQUAL_TO: indicates exact match.
invert	Boolean	Specifies whether reverse matching is supported. The value can be true or false . The default value is false . This parameter is reserved.

Parameter	Type	Description
key	String	Specifies the key of the match content. The default value is null . This parameter is reserved. The value contains a maximum of 255 characters.
value	String	Specifies the value of the match content. The value contains a maximum of 128 characters. <ul style="list-style-type: none"> When type is set to HOST_NAME, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit. When type is set to PATH, the value can contain a maximum of 128 characters. When compare_type is set to STARTS_WITH or EQUAL_TO, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+?,=!: \()[]{}</code>
provisioning_status	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the forwarding rule.

Example Request

- Example request: Querying all forwarding rules of a specific forwarding policy
GET <https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules>

Example Response

- Example response

```
{
  "rules": [
    {
      "compare_type": "EQUAL_TO",
      "provisioning_status": "ACTIVE",
      "admin_state_up": true,
      "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",

      "invert": false,
      "value": "www.test.com",
      "key": null,
      "type": "HOST_NAME",
      "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
    },
    {
      "compare_type": "EQUAL_TO",
      "provisioning_status": "ACTIVE",
```

```
"admin_state_up": true,  
"tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",  
  
"invert": false,  
"value": "/aaa.html",  
"key": null,  
"type": "PATH",  
"id": "f02b3bca-69d2-4335-a3fa-a8054e996213"  
}  
]  
}
```

Status Code

For details, see [Status Codes](#).

5.6.3 Querying Details of a Forwarding Rule

Function

This API is used to query details about a forwarding rule.

URI

GET /v2/{project_id}/elb/l7policies/{l7policy_id}/rules/{l7rule_id}

Table 5-146 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
l7policy_id	Yes	String	Specifies the forwarding policy ID.
l7rule_id	Yes	String	Specifies the forwarding rule ID.

Request

None

Response

Table 5-147 Parameter description

Parameter	Type	Description
rule	Rule object	Specifies the forwarding rule. For details, see Table 5-148 .

Table 5-148 rule parameter description

Parameter	Type	Description
id	String	Specifies the forwarding rule ID.
tenant_id	String	Specifies the ID of the project where the forwarding rule is used. The value contains a maximum of 255 characters.
admin_state_up	Boolean	Specifies the administrative status of the forwarding rule. The value can only be true .
type	String	Specifies the match type of a forwarding rule. The value can be: <ul style="list-style-type: none"> • HOST_NAME: matches the domain name in the request. • PATH: matches the path in the request.
compare_type	String	Specifies the match mode. The options are as follows: When type is set to HOST_NAME , the value of this parameter can only be the following: <ul style="list-style-type: none"> • EQUAL_TO: indicates exact match. When type is set to PATH , the value of this parameter can be one of the following: <ul style="list-style-type: none"> • REGEX: indicates regular expression match. • STARTS_WITH: indicates prefix match. • EQUAL_TO: indicates exact match.
invert	Boolean	Specifies whether reverse matching is supported. The value can be true or false . The default value is false . This parameter is reserved.
key	String	Specifies the key of the match content. The default value is null . This parameter is reserved. The value contains a maximum of 255 characters.

Parameter	Type	Description
value	String	Specifies the value of the match content. The value contains a maximum of 128 characters. <ul style="list-style-type: none">When type is set to HOST_NAME, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit.When type is set to PATH, the value can contain a maximum of 128 characters. When compare_type is set to STARTS_WITH or EQUAL_TO, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+?,=!: \() [] {}</code>
provisioning_status	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the forwarding rule.

Example Request

- Example request: Querying details of a forwarding rule
GET `https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules/67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3`

Example Response

- Example response 1

```
{
  "rule": {
    "compare_type": "EQUAL_TO",
    "provisioning_status": "ACTIVE",
    "admin_state_up": true,
    "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",

    "invert": false,
    "value": "/index.html",
    "key": null,
    "type": "PATH",
    "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
  }
}
```

Status Code

For details, see [Status Codes](#).

5.6.4 Updating a Forwarding Rule

Function

This API is used to update a forwarding rule. You can change the mode that how traffic is distributed by updating the forwarding rule.

URI

PUT /v2/{project_id}/elb/l7policies/{l7policy_id}/rules/{l7rule_id}

Table 5-149 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
l7policy_id	Yes	String	Specifies the forwarding policy ID.
l7rule_id	Yes	String	Specifies the forwarding rule ID.

Request

Table 5-150 Parameter description

Parameter	Mandatory	Type	Description
rule	Yes	Rule object	Specifies the forwarding rule. For details, see Table 5-151 .

Table 5-151 rule parameter description

Parameter	Mandatory	Type	Description
compare_type	No	String	<p>Specifies the match mode. The options are as follows:</p> <p>When type is set to HOST_NAME, the value of this parameter can only be the following:</p> <ul style="list-style-type: none">• EQUAL_TO: indicates exact match. <p>When type is set to PATH, the value of this parameter can be one of the following:</p> <ul style="list-style-type: none">• REGEX: indicates regular expression match.• STARTS_WITH: indicates prefix match.• EQUAL_TO: indicates exact match.
admin_state_up	No	Boolean	<p>Specifies the administrative status of the forwarding rule. The value can only be true.</p>
invert	No	Boolean	<p>Specifies whether reverse matching is supported.</p> <p>The value can be true or false. The default value is false.</p> <p>This parameter is reserved.</p>
key	No	String	<p>Specifies the key of the match content. The default value is null.</p> <p>This parameter is reserved.</p> <p>The value contains a maximum of 255 characters.</p>

Parameter	Mandatory	Type	Description
value	No	String	<p>Specifies the value of the match content. The value cannot contain spaces.</p> <p>The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"> When type is set to HOST_NAME, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit. When type is set to PATH, the value can contain a maximum of 128 characters. When compare_type is set to STARTS_WITH or EQUAL_TO, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$. * +? , = ! : \ () [] { }</code>

Response

Table 5-152 Parameter description

Parameter	Type	Description
rule	Rule object	Specifies the forwarding rule. For details, see Table 5-153 .

Table 5-153 rule parameter description

Parameter	Type	Description
id	String	Specifies the forwarding rule ID.
tenant_id	String	<p>Specifies the ID of the project where the forwarding rule is used.</p> <p>The value contains a maximum of 255 characters.</p>
admin_state_up	Boolean	Specifies the administrative status of the forwarding rule. The value can only be true .

Parameter	Type	Description
type	String	Specifies the match type of a forwarding rule. The value can be: <ul style="list-style-type: none"> ● HOST_NAME: matches the domain name in the request. ● PATH: matches the path in the request.
compare_type	String	Specifies the match mode. The options are as follows: When type is set to HOST_NAME , the value of this parameter can only be the following: <ul style="list-style-type: none"> ● EQUAL_TO: indicates exact match. When type is set to PATH , the value of this parameter can be one of the following: <ul style="list-style-type: none"> ● REGEX: indicates regular expression match. ● STARTS_WITH: indicates prefix match. ● EQUAL_TO: indicates exact match.
invert	Boolean	Specifies whether reverse matching is supported. The value can be true or false . The default value is false . This parameter is reserved.
key	String	Specifies the key of the match content. The default value is null . This parameter is reserved. The value contains a maximum of 255 characters.
value	String	Specifies the value of the match content. The value contains a maximum of 128 characters. <ul style="list-style-type: none"> ● When type is set to HOST_NAME, the value can contain a maximum of 100 characters that contain only letters, digits, hyphens (-), and periods (.), and must start with a letter or digit. ● When type is set to PATH, the value can contain a maximum of 128 characters. When compare_type is set to STARTS_WITH or EQUAL_TO, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+?;=!: \(\)[]{}</code>

Parameter	Type	Description
provisioning_status	String	This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the forwarding rule.

Example Request

- Example request: Updating a forwarding rule
PUT https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules/c6f457b8-bf6f-45d7-be5c-a3226945b7b1

```
{
  "rule": {
    "compare_type": "STARTS_WITH",
    "value": "/ccc.html"
  }
}
```

Example Response

- Example response

```
{
  "rule": {
    "compare_type": "STARTS_WITH",
    "provisioning_status": "ACTIVE",
    "admin_state_up": true,
    "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
    "invert": false,
    "value": "/ccc.html",
    "key": null,
    "type": "PATH",
    "id": "c6f457b8-bf6f-45d7-be5c-a3226945b7b1"
  }
}
```

Status Code

For details, see [Status Codes](#).

5.6.5 Deleting a Forwarding Rule

Function

This API is used to delete a forwarding rule.

URI

DELETE /v2/{project_id}/elb/l7policies/{l7policy_id}/rules/{l7rule_id}

Table 5-154 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the project ID.
l7policy_id	Yes	String	Specifies the forwarding policy ID.
l7rule_id	Yes	String	Specifies the forwarding rule ID.

Request

None

Response

None

Example Request

- Example request: Deleting a forwarding rule
DELETE https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/
5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules/c6f457b8-bf6f-45d7-be5c-a3226945b7b1

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

5.7 Whitelist

5.7.1 Adding a Whitelist

Function

This API is used to add a whitelist to control access to a specific listener. After a whitelist is added, only IP addresses in the whitelist can access the listener.

URI

POST /v2/{project_id}/elb/whitelists

Table 5-155 Parameter description

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

Request

Table 5-156 Parameter description

Parameter	Mandatory	Type	Description
whitelist	Yes	Whitelist object	Specifies the whitelist. For details, see Table 5-157 .

Table 5-157 whitelist parameter description

Parameter	Mandatory	Type	Description
tenant_id	No	String	Specifies the ID of the project where the whitelist is used. The value must be the same as the value of project_id in the token. The value contains a maximum of 255 characters.
listener_id	Yes	String	Specifies the listener ID. Only one whitelist can be created for a listener.
enable_whitelist	No	Boolean	Specifies whether to enable access control. true : Access control is enabled. false : Access control is disabled. The default value is true .
whitelist	No	String	Specifies the IP addresses in the whitelist. Use commas (,) to separate multiple IP addresses. You can specify an IP address, for example, 192.168.11.1. You can also specify an IP address range, for example, 192.168.0.1/24. The default value is an empty string, that is, "".

Response

Table 5-158 Parameter description

Parameter	Type	Description
whitelist	Whitelist object	Specifies the whitelist. For details, see Table 5-159 .

Table 5-159 whitelist parameter description

Parameter	Type	Description
id	String	Specifies the whitelist ID.
tenant_id	String	Specifies the ID of the project where the whitelist is used. The value contains a maximum of 255 characters.
listener_id	String	Specifies the ID of the listener to which the whitelist is added.
enable_whitelist	Boolean	Specifies whether to enable access control. true : Access control is enabled. false : Access control is disabled.
whitelist	String	Specifies the IP addresses in the whitelist.

Example Request

- Example request: Adding a whitelist
POST https://{Endpoint}/v2/eabfefa3fd1740a88a47ad98e132d238/elb/whitelists

```
{
  "whitelist": {
    "listener_id": "eabfefa3fd1740a88a47ad98e132d238",
    "enable_whitelist": true,
    "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
  }
}
```

Example Response

- Example response

```
{
  "whitelist": {
    "id": "eabfefa3fd1740a88a47ad98e132d238",
    "listener_id": "eabfefa3fd1740a88a47ad98e132d238",
    "tenant_id": "eabfefa3fd1740a88a47ad98e132d238",
    "enable_whitelist": true,
    "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
  }
}
```

```
}  
}
```

Status Code

For details, see [Status Codes](#).

5.7.2 Querying Details of a Whitelist

Function

This API is used to query details about a whitelist using its ID.

URI

GET /v2/{project_id}/elb/whitelists/{whitelist_id}

Table 5-160 Parameter description

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

Request

None

Response

Table 5-161 Parameter description

Parameter	Type	Description
whitelist	Whitelist object	Specifies the whitelist. For details, see Table 5-162 .

Table 5-162 whitelist parameter description

Parameter	Type	Description
id	String	Specifies the whitelist ID.
tenant_id	String	Specifies the ID of the project where the whitelist is used. The value contains a maximum of 255 characters.

Parameter	Type	Description
listener_id	String	Specifies the ID of the listener to which the whitelist is added.
enable_whitelist	Boolean	Specifies whether to enable access control. true : Access control is enabled. false : Access control is disabled.
whitelist	String	Specifies the IP addresses in the whitelist.

Example Request

- Example request: Querying details of a whitelist
GET https://{Endpoint}/v2/eabfefa3fd1740a88a47ad98e132d238/elb/whitelists/09e64049-2ab0-4763-a8c5-f4207875dc3e

Example Response

- Example response

```
{
  "whitelist": {
    "id": "eabfefa3fd1740a88a47ad98e132d238",
    "listener_id": "eabfefa3fd1740a88a47ad98e132d238",
    "tenant_id": "eabfefa3fd1740a88a47ad98e132d238",
    "enable_whitelist": true,
    "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
  }
}
```

Status Code

For details, see [Status Codes](#).

5.7.3 Querying Whitelists

Function

This API is used to query the whitelists. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

Constraints

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

URI

GET /v2/{project_id}/elb/whitelists

Table 5-163 Path parameters

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

Table 5-164 Query parameters

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the whitelist from which pagination query starts, that is, the ID of the last whitelist on the previous page. This parameter must be used together with limit .
limit	No	Integer	Specifies the number of whitelists on each page. If this parameter is not set, all whitelists are queried by default.
page_reverse	No	Boolean	Specifies the page direction. The value can be true or false , and the default value is false . The last page in the list requested with page_reverse set to false will not contain the "next" link, and the last page in the list requested with page_reverse set to true will not contain the "previous" link. This parameter must be used together with limit .
id	No	String	Specifies the whitelist ID.
tenant_id	No	String	Specifies the ID of the project where the whitelist is used. The value contains a maximum of 255 characters.
listener_id	No	String	Specifies the ID of the listener to which the whitelist is added.
enable_whitelist	No	Boolean	Specifies whether to enable access control. true : Access control is enabled. false : Access control is disabled.

Parameter	Mandatory	Type	Description
whitelist	No	String	Specifies the IP addresses in the whitelist.

Request

None

Response

Table 5-165 Parameter description

Parameter	Type	Description
whitelists	Array of Whitelists objects	Specifies the whitelist. For details, see Table 5-166 .

Table 5-166 whitelists parameter description

Parameter	Type	Description
id	String	Specifies the whitelist ID.
tenant_id	String	Specifies the ID of the project where the whitelist is used. The value contains a maximum of 255 characters.
listener_id	String	Specifies the ID of the listener to which the whitelist is added.
enable_whitelist	Boolean	Specifies whether to enable access control. true: Access control is enabled. false: Access control is disabled.
whitelist	String	Specifies the IP addresses in the whitelist.

Example Request

- Example request 1: Querying all whitelists
GET <https://{Endpoint}/v2/eabfefa3fd1740a88a47ad98e132d238/elb/whitelists>
- Example request 2: Querying the whitelists added to listener eabfefa3fd1740a88a47ad98e132d230

```
GET https://{Endpoint}/v2/eabfefa3fd1740a88a47ad98e132d238/elb/whitelists?  
listener_id=eabfefa3fd1740a88a47ad98e132d230
```

Example Response

- Example response 1

```
{  
  "whitelists": [  
    {  
      "id": "eabfefa3fd1740a88a47ad98e132d238",  
      "listener_id": "eabfefa3fd1740a88a47ad98e132d238",  
      "tenant_id": "eabfefa3fd1740a88a47ad98e132d238",  
      "enable_whitelist": true,  
      "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"  
    },  
    {  
      "id": "eabfefa3fd1740a88a47ad98e132d326",  
      "listener_id": "eabfefa3fd1740a88a47ad98e132d327",  
      "tenant_id": "eabfefa3fd1740a88a47ad98e132d436",  
      "enable_whitelist": true,  
      "whitelist": "192.168.12.1,192.168.1.1/24,192.168.203.18/8,100.164.5.1/24"  
    }  
  ]  
}
```

- Example response 2

```
{  
  "whitelists": [  
    {  
      "id": "eabfefa3fd1740a88a47ad98e132d238",  
      "listener_id": "eabfefa3fd1740a88a47ad98e132d230",  
      "tenant_id": "eabfefa3fd1740a88a47ad98e132d239",  
      "enable_whitelist": true,  
      "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"  
    },  
    {  
      "id": "eabfefa3fd1740a88a47ad98e132d326",  
      "listener_id": "eabfefa3fd1740a88a47ad98e132d327",  
      "tenant_id": "eabfefa3fd1740a88a47ad98e132d439",  
      "enable_whitelist": true,  
      "whitelist": "192.168.12.1,192.168.1.1/24,192.168.203.18/8,100.164.5.1/24"  
    }  
  ]  
}
```

Status Code

For details, see [Status Codes](#).

5.7.4 Updating a Whitelist

Function

This API is used to update a whitelist. You can enable or disable the whitelist function or change IP addresses in the whitelist. If you change IP addresses in the whitelist, it will be deleted, and a new one is generated.

URI

```
PUT /v2/{project_id}/elb/whitelists/{whitelist_id}
```

Table 5-167 Parameter description

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

Request

Table 5-168 Parameter description

Parameter	Mandatory	Type	Description
whitelist	Yes	Whitelist object	Specifies the whitelist. For details, see Table 5-169 .

Table 5-169 whitelist parameter description

Parameter	Mandatory	Type	Description
enable_whitelist	No	Boolean	Specifies whether to enable access control. true : Access control is enabled. false : Access control is disabled. The default value is true .
whitelist	No	String	Specifies the IP addresses in the whitelist. Use commas (,) to separate multiple IP addresses. You can specify an IP address, for example, 192.168.11.1. You can also specify an IP address range, for example, 192.168.0.1/24. The default value is an empty string, that is, "".

Response

Table 5-170 Parameter description

Parameter	Type	Description
whitelist	Whitelist object	Specifies the whitelist. For details, see Table 5-171 .

Table 5-171 whitelist parameter description

Parameter	Type	Description
id	String	Specifies the whitelist ID.
tenant_id	String	Specifies the ID of the project where the whitelist is used. The value contains a maximum of 255 characters.
listener_id	String	Specifies the ID of the listener to which the whitelist is added.
enable_whitelist	Boolean	Specifies whether to enable access control. true : Access control is enabled. false : Access control is disabled.
whitelist	String	Specifies the IP addresses in the whitelist.

Example Request

- Example request: Updating a whitelist
PUT <https://{Endpoint}/v2/eabfefa3fd1740a88a47ad98e132d238/elb/whitelists/dcaf46f1-037c-4f63-a31f-e0c4c18032c7>

```
{
  "whitelist": {
    "enable_whitelist": true,
    "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
  }
}
```

Example Response

- Example response

```
{
  "whitelist": {
    "id": "eabfefa3fd1740a88a47ad98e132d238",
    "listener_id": "eabfefa3fd1740a88a47ad98e132d238",
    "tenant_id": "eabfefa3fd1740a88a47ad98e132d238",
    "enable_whitelist": true,
    "whitelist": "192.168.11.1,192.168.0.1/24,192.168.201.18/8,100.164.0.1/24"
  }
}
```

```
}  
}
```

Status Code

For details, see [Status Codes](#).

5.7.5 Deleting a Whitelist

Function

This API is used to delete a specific whitelist.

URI

DELETE /v2/{project_id}/elb/whitelists/{whitelist_id}

Table 5-172 Parameter description

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

Request

None

Response

None

Example Request

- Example request: Deleting a whitelist
DELETE https://{Endpoint}/v2/eabfefa3fd1740a88a47ad98e132d238/elb/whitelists/
35cb8516-1173-4035-8dae-0dae3453f37f

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

5.8 Certificate

5.8.1 Creating a Certificate

Function

This API is used to create a certificate. After a certificate is bound to a listener, the load balancer authenticates the client using this certificate, and backend servers can establish secure and reliable HTTP connections with the client.

URI

POST /v2/{project_id}/elb/certificates

Table 5-173 Path parameters

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

Request

Table 5-174 Query parameters

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the certificate. This parameter is reserved, and the default value is true .
name	No	String	Specifies the certificate name. The value contains a maximum of 255 characters.
description	No	String	Provides supplementary information about the certificate. The value contains a maximum of 255 characters.

Parameter	Mandatory	Type	Description
type	No	String	<p>Specifies the certificate type. The default value is server.</p> <p>The value can be:</p> <ul style="list-style-type: none">• server: indicates the server certificate.• client: indicates the CA certificate.
domain	No	String	<p>Specifies the domain name associated with the server certificate. The default value is null.</p> <p>The value contains a maximum of 100 characters.</p> <p>Value range:</p> <ul style="list-style-type: none">• A common domain name contains 0 to 100 characters and consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit.• In addition to the requirements for common domain names, a wildcard domain name can start with an asterisk (*). <p>NOTE This parameter takes effect only when type is set to server.</p>
private_key	No	String	<p>Specifies the private key of the server certificate. The value must be PEM encoded.</p> <ul style="list-style-type: none">• This parameter will be ignored if type is set to client. A CA server can still be created and used normally. This parameter will be left blank even if you enter a private key that is not PEM encoded.• This parameter is mandatory only when type is set to server. If you enter an invalid private key, an error is returned.

Parameter	Mandatory	Type	Description
certificate	Yes	String	Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter type determines whether a public key or CA certificate is required. Both types of certificates are in PEM format.
enterprise_project_id	No	String	Specifies the enterprise project ID. When creating a load balancer, you can assign an enterprise project to the load balancer. The value is character string 0 or a UUID with hyphens (-). Value 0 indicates the default enterprise project. The default value is 0 .
source	No	String	Specifies the source of the certificate. The default value is null . Constraints: If scm_certificate_id is not left blank and source is not specified, the default value is scm .
protection_status	No	String	Specifies the protection status. The value can be: <ul style="list-style-type: none"> nonProtection: The load balancer is not protected. consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console. Default value: nonProtection
protection_reason	No	String	Specifies why the modification protection is enabled.

Response

Table 5-175 Parameter description

Parameter	Type	Description
id	String	Specifies the certificate ID.

Parameter	Type	Description
tenant_id	String	Specifies the ID of the project where the certificate is used. The value contains a maximum of 255 characters.
admin_state_up	Boolean	Specifies the administrative status of the certificate. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">• true: Enabled• false: Disabled
name	String	Specifies the certificate name. The value contains a maximum of 255 characters.
description	String	Provides supplementary information about the certificate. The value contains a maximum of 255 characters.
type	String	Specifies the certificate type. The value can be: <ul style="list-style-type: none">• server: indicates the server certificate.• client: indicates the CA certificate.
domain	String	Specifies the domain name associated with the server certificate. The value contains a maximum of 100 characters.
private_key	String	Specifies the private key of the server certificate in PEM format.
certificate	String	Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter type determines whether a public key or CA certificate is required. Both types of certificates are in PEM format.
expire_time	String	Specifies the time when the certificate expires. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.
create_time	String	Specifies the time when the certificate was created. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.

Parameter	Type	Description
update_time	String	Specifies the time when the certificate was updated. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.
source	String	Specifies the source of the certificate. The default value is null . Constraints: If scm_certificate_id is not left blank and source is not specified, the default value is scm .
protection_status	String	Specifies the protection status. The value can be: <ul style="list-style-type: none"> nonProtection: The load balancer is not protected. consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console. Default value: nonProtection
protection_reason	String	Specifies why the modification protection is enabled.

Example Request

- Example request: Creating a certificate

POST https://{Endpoint}/v2/930600df07ac4f66964004041bd3deaf/elb/certificates

```
{
  "name": "https_certificate",
  "description": "description for certificate",
  "type": "server",
  "domain": "www.elb.com",
  "private_key":
  "-----BEGIN PRIVATE KEY-----
  \nMIIEvglBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M
  \n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KcN1nfzTvl2ksXITQ2o9BkpStrPe
  \ntB4s32ZiJRmlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
  \nMD30gLh6QoP3cq7PGWwcuZKV7hjd1tjCTQukwMvqV8lq39buNplgDOWzEP5AzzXt
  \nCOFYn6RTH5SRug4hKNN7sT1eYMsIHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl
  \nZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwCRLU08k
  \nEo04Z9H/AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/HL
  \nfvCArftGgMaYWPSNCRJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFgZjv5OQB
  \nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
  \nciu9YklnNEHu6uRJ5g/eGGX3KQynTvVhN0VGAJvjTXcoU6fm7gYdHAD6jk9lc9M
  \nEGpfYI6AdHlwFZcT/RNAxhP82lg2gUJSgAu66FFdJmWQXKbafKdP3zq4Up8a7Ale
  \nkrguPtfv1vWklg+bUFhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
  \nXUqgCZo8MKeV2jf2drIxRRwRL33SksQbzAQ/qrLdT7GP3sCGqvkvWY2FPdFYf8kx
  \nGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpp7dt
  \nJ7n8EzkRUNE6alMHOFeeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
  \niWgTWHXPZxUQaYhpjXo6+IMl6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
  \nS6VjoTkF6r7VZoLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
  \nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
  \n1IVQhELGI9CbKsDzKM71GyElmix/T7FnJSHIWIho1qVo6AQyduNWnAQD15pr8KAd
  \nXGXAZZ1FQcb3KYa+2fIERmazdOTWjYz0tGqZnXkEeMdSLkmlqCRigWhGQKBgDak
  \n/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocDxtY4Vha
  \nfl7FPMdvGl8ioYbvlHFh+X0xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
```

```
\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9o
\njHjWB7pQlUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDjKxfciXKcsYr9lluk
\nfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd
\n3fy+1rCUwzOp9LSjtYf4ege\n-----END PRIVATE KEY-----",
  "certificate":
  "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgICERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nb21wYW55IENBMB4XDTE4MDcwMjEzMDU0N1oXDTQ1MTEwNzEzMDU0N1owFDESMBAG
\nA1UEAwwJbG9yYXRob3N0MIIIBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
\n0FQGzi3ucTX+DNud1p/b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5
\nU0NqPQZKUrZz3rQeLN9mYiUTJZPutYIFDDbB8CtIv+eyU9yYJslWx/Bm5kWNPh9
\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzlnLmSle4Y3dbYwk0LpMDL6fCHKt/W7jaS
\nnIzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/K
\ny09cxlKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7yw3nkOOTLMI28IEv0WY
\nYd7CMJQkS1NPJBKNogFR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\nnhwQKuUvJhwr/AAABMBMGGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBCwUA
\nA4IBAQA8lMQxaTey7EjXtRSLVIEAMftAQP6jijNQuvIBQYUDauDT4W2XU25wAn
\nnjiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
\nnezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNyjvPRLyZp1HMnI6hjkPk4PCZ
\n/nwKna0dlScati9Cct3UzXSNJOSLalKdHErH08lqd+1BchScxChk0xNITn1HZZGml
\n/n+vbmunok3A2luc14rnsrbcKGYqXGikySN6B2cRLBDK4Y3wChiW6NVVtVqcx5/mZ
\nniYsGDVN+9QBd0eYUHce+77s96i3l\n-----END CERTIFICATE-----",
  "source": "CCE",
  "protection_status": "consoleProtection",
  "protection_reason": "Note that the resource is created by the CCE. Modify the resource on the CCE
portal. Otherwise, services may be interrupted."
}
```

Example Response

- Example response

```
{
  "id": "61328fa3d4db432698e197b4927f91bf",
  "tenant_id": "0c1503d710984bad92306faea3654dfd",
  "admin_state_up": true,
  "name": "https_certificate",
  "description": "description for certificate",
  "type": "server",
  "domain": "www.elb.com",
  "private_key": "-----BEGIN PRIVATE KEY-----
\nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KcnX1nfzTvI2ksXITQ2o9BkpStnPe
\nntB4s32ZiJRMLk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72Luna7rM
\nnMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lCq39buNpIgdOWZEP5AqzXt
\nnCOFYn6RTH5SRug4hKNN7sT1eYMsLHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl
\nnZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwCRLU08k
\nnEo04Z9H/AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\n/nfvCArftGgMaYWPSNcJRMXB7tPwpQu19esjz4Z/cr2Je4fTLPrffGUsHFgZjv5QQB
\nnZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
\nnciu9YklNNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
\nnEGpfYI6AdHlwFZct/RNAXhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7Ale
\nnkrquPtfV1vWklg+bUfhgGaiAEYTPAUN9t2DVIijgQKBgQDnYMMsaF0r557CM1CT
\n\nXUuqCZo8MKeV2jf2drlxRRwRl33SksQbzAQ/qrlD7GP3sCGqvkxWY2FPdfYf8kx
\nnGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpp7dt
\n\n7n8EzkRUNE6alMHOFEeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\n\nniWgTWHXPZxUQaYhpyXo6+IMl6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
\n\nlS6VjoTkF6r7VZoLXXOfbuXh6l8K8lQRfBpJff56p9pMwaBpDNDrfpHB5utBU
\n\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
\n\n1lVQhELG9CbKsdzKM71GyElmix/T7FnSHIWIho1qVo6AQyduNWNnAQD15pr8KAd
\n\nXGXAZZ1FQcb3KYa+2ffLERmazedOTwYz0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
\n\n/735uP20KKqhNehZpC2dJei70ilRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
\n\nnfl7FPMdvGl8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\n\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9o
\n\njHjWB7pQlUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDjKxfciXKcsYr9lluk
\n\nfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd
\n\n3fy+1rCUwzOp9LSjtYf4ege
\n\n-----END PRIVATE KEY-----",
  "certificate": "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgICERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nb21wYW55IENBMB4XDTE4MDcwMjEzMDU0N1oXDTQ1MTEwNzEzMDU0N1owFDESMBAG
\nA1UEAwwJbG9yYXRob3N0MIIIBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
\n0FQGzi3ucTX+DNud1p/b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5
\nU0NqPQZKUrZz3rQeLN9mYiUTJZPutYIFDDbB8CtIv+eyU9yYJslWx/Bm5kWNPh9
\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzlnLmSle4Y3dbYwk0LpMDL6fCHKt/W7jaS
\nnIzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/K
\ny09cxlKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7yw3nkOOTLMI28IEv0WY
\nYd7CMJQkS1NPJBKNogFR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\nnhwQKuUvJhwr/AAABMBMGGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBCwUA
\nA4IBAQA8lMQxaTey7EjXtRSLVIEAMftAQP6jijNQuvIBQYUDauDT4W2XU25wAn
\nnjiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
\nnezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNyjvPRLyZp1HMnI6hjkPk4PCZ
\n/nwKna0dlScati9Cct3UzXSNJOSLalKdHErH08lqd+1BchScxChk0xNITn1HZZGml
\n/n+vbmunok3A2luc14rnsrbcKGYqXGikySN6B2cRLBDK4Y3wChiW6NVVtVqcx5/mZ
\nniYsGDVN+9QBd0eYUHce+77s96i3l\n-----END CERTIFICATE-----"
}
```



```
\nb21wYW55IENBMB4XDTE4MDcwMjEzMjU0N1oXDTQ1MTEwNzEzMjU0N1owFDESMBAG
\nA1UEAwwJbG9jYWxob3N0MIIlBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
\n0FQGzi3ucTX+DNud1p/b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5
\nU0NqPQZKUrZz3rQeLN9mYiUTJZPutYIFDDbB8CtIgv+eyU9yYslWx/Bm5kWNPh9
\n7B9Yu9pbp2u6zDA99lC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\nlAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/K
\ny09cxLKAFtgoZWQD2FAZJf9F7k1kYNwqITz3CPILZUUn7yw3nkOOTLMI28IEv0Wy
\nYd7CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\nhwQKuUvJhwR/AAABMBMGAlUdJQMMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBCwUA
\nA4lBAQA8IMQxaTey7EjXtRLSVIEAMftAQP6GijNQuvlBQYUDauDT4W2XUZ5wAn
\njiOyQ83va672K1G9s8n6xlH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
\nnezmcwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRLYLzp1HMnl6hkjPk4PCZ
\nnwKnh0dlScati9Cct3UzXSNJOSLalKdHErH08lqd+1BchScxCfk0xNITn1HZZGml
\n+vbmunok3A2luc14rnsrbcKGYqGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ
\niYsGDVN+9QBd0eYUHce+77s96i3l
\n-----END CERTIFICATE-----",
  "expire_time": "2026-09-24 07:45:00",
  "create_time": "2024-10-30 08:36:50",
  "update_time": "2024-10-30 08:36:50",
  "source": "CCE",
  "protection_status": "consoleProtection",
  "protection_reason": "Note that the resource is created by the CCE. Modify the resource on the CCE
portal. Otherwise, services may be interrupted."
}
```

Status Code

For details, see [Status Codes](#).

5.8.2 Querying Certificates

Function

This API is used to query the certificates. Filter query and pagination query are supported. Unless otherwise specified, exact match is applied.

Constraints

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

URI

GET /v2/{project_id}/elb/certificates

Table 5-176 Parameter description

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

Table 5-177 Parameter description

Parameter	Mandatory	Type	Description
marker	No	String	Specifies the ID of the certificate from which pagination query starts, that is, the ID of the last certificate on the previous page. This parameter must be used together with limit .
limit	No	Integer	Specifies the number of certificates on each page. If this parameter is not set, all certificates are queried by default.
page_reverse	No	Boolean	Specifies the page direction. The value can be true or false , and the default value is false . The last page in the list requested with page_reverse set to false will not contain the "next" link, and the last page in the list requested with page_reverse set to true will not contain the "previous" link. This parameter must be used together with limit .
id	No	String	Specifies the certificate ID.
name	No	String	Specifies the certificate name. The value contains a maximum of 255 characters.
description	No	String	Provides supplementary information about the certificate. The value contains a maximum of 255 characters.
type	No	String	Specifies the certificate type. The default value is server . The value can be: <ul style="list-style-type: none">• server: indicates the server certificate.• client: indicates the CA certificate.

Parameter	Mandatory	Type	Description
domain	No	String	<p>Specifies the domain name associated with the server certificate. The default value is null.</p> <p>The value contains a maximum of 100 characters.</p> <p>Value range:</p> <ul style="list-style-type: none">• A common domain name contains 0 to 100 characters and consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit.• In addition to the requirements for common domain names, a wildcard domain name can start with an asterisk (*). This parameter takes effect only when type is set to server.
private_key	No	String	<p>Specifies the private key of the server certificate. The value must be PEM encoded.</p> <ul style="list-style-type: none">• This parameter will be ignored if type is set to client. A CA server can still be created and used normally. This parameter will be left blank even if you enter a private key that is not PEM encoded.• This parameter is mandatory only when type is set to server. If you enter an invalid private key, an error is returned.
certificate	No	String	<p>Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter type determines whether a public key or CA certificate is required. Both types of certificates are in PEM format.</p>

Parameter	Mandatory	Type	Description
create_time	No	String	Specifies the time when the certificate was created. The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format.
update_time	No	String	Specifies the time when the certificate was updated. The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format.
source	No	String	Specifies the source of the certificate. The default value is null . Constraints: If scm_certificate_id is not left blank and source is not specified, the default value is scm .
protection_status	No	String	Specifies the protection status. The value can be: <ul style="list-style-type: none"> • nonProtection: The load balancer is not protected. • consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console. Default value: nonProtection
protection_reason	No	String	Specifies why the modification protection is enabled.

Request

None

Response

Table 5-178 Response parameters

Parameter	Type	Description
certificates	Array of Certificates objects	Lists the certificates. For details, see Table 5-179 .
instance_num	Integer	Specifies the number of certificates.

Table 5-179 certificates parameter description

Parameter	Type	Description
id	String	Specifies the certificate ID.
tenant_id	String	Specifies the ID of the project where the certificate is used. The value contains a maximum of 255 characters.
admin_state_up	Boolean	Specifies the administrative status of the certificate. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">● true: Enabled● false: Disabled
name	String	Specifies the certificate name. The value contains a maximum of 255 characters.
description	String	Provides supplementary information about the certificate. The value contains a maximum of 255 characters.
type	String	Specifies the certificate type. The value can be: <ul style="list-style-type: none">● server: indicates the server certificate.● client: indicates the CA certificate.
domain	String	Specifies the domain name associated with the server certificate. The value contains a maximum of 100 characters.
private_key	String	Specifies the private key of the server certificate in PEM format.
certificate	String	Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter type determines whether a public key or CA certificate is required. Both types of certificates are in PEM format.
expire_time	String	Specifies the time when the certificate expires. The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format.

Parameter	Type	Description
create_time	String	Specifies the time when the certificate was created. The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format.
update_time	String	Specifies the time when the certificate was updated. The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format.
source	String	Specifies the source of the certificate. The default value is null . Constraints: If scm_certificate_id is not left blank and source is not specified, the default value is scm .
protection_status	String	Specifies the protection status. The value can be: <ul style="list-style-type: none">• nonProtection: The load balancer is not protected.• consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console. Default value: nonProtection
protection_reason	String	Specifies why the modification protection is enabled.

Example Request

- Request example 1: Querying all certificates
GET https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/certificates
- Example 2: Querying a certificate whose ID is ef4d341365754a959556576501791b19 or ed40e8ea9957488ea82de025e35b74c0
GET https://{Endpoint}/v2/601240b9c5c94059b63d484c92cfe308/elb/certificates?id=ef4d341365754a959556576501791b19&id=ed40e8ea9957488ea82de025e35b74c0

Example Response

- Example response 1

```
{
  "certificates": [
    {
      "certificate": "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgI CERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nb21wYW55IENBMB4XDTE4MDcwMjEzMDUwN1oXDTE4MTExNzEzMDUwN1owFDESMBAG
\nA1UEAwJbG9jYWxob3N0MIIIBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA\n0nFQGzi3ucTX
+DNud1p/
b4XVM6I3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5\nu0NqPQZKUrZz3rQeLN9mYiUTJZPutYIFDDb
B8CtIgV+eyU9yYjslWx/
Bm5kWNPh9\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
```

```

\nIAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/K
\ny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPILZUUn7yw3nkOOtLMI28IEv0Wwy
\nYd7CMJQkS1NPJBKNogfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\nhwQKuUvJhwr/AAABMBMGA1UdJQMMAoGCCsGAQUFBwMBAAOQCqS5B3DQEBcWUA
\nA4lBAQA8lMQxaTey7EjXtRSLVIEAMftAQP6GijNQvIBQYUDauDT4W2XU25wAn
\njiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
\nezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRLYLzp1HMnI6hkjPk4PCZ
\nwKnha0dlScati9Cct3UzXSNJOSLalKdHErH08lqd+1BchScxCfk0xNITn1HZZGml\n
+vbmunok3A2luc14rnsrbkGYqGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ\niYsGDVN
+9QBd0eYUHce+77s96i3l\n-----END CERTIFICATE-----",
    "create_time": "2017-02-25 09:35:27",
    "expire_time": "2045-11-17 13:25:47",
    "description": "description for certificate",
    "domain": "www.elb.com",
    "id": "23ef9aad4ecb463580476d324a6c71af",
    "admin_state_up": true,
    "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
    "name": "https_certificate",
    "private_key":
"-----BEGIN PRIVATE KEY-----
\nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBAgEAAoIBAQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4j+B7kYwsMhRcgdcj8KcN1nfzTvi2ksXITQ2o9BkpStnPe\ntB4s32ZIJRmlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lCq39buNplgDOWzEP5AzcXt
\nCOFYn6RTH5SRug4hKNN7sT1eYmSlHu7wtEBDKVgrLjOCe/W2f8rLT1zEsOAW2Ch\nnZAPYUBkl/
0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwCRLU08k\nnEo04Z9H/
AgMBAAEcggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\nfvCArftGgMaYWPSNCRJMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUsHFgZjv5OQB
\nZVe4a5Hj1OcgYhwCqP5d29i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
\nnciu9YklnNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvJTxcoU6fm7gYdHAD6jk9c9M\nnEGpfY16AdHlWFZcT/
RNAXhP82lg2gUJSgAu66FfdJmWQXKbafKdP3zq4Up8a7Ale\nnkrguPtFv1vWklg
+bUfhGgaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\nXUqgCzo8MKeV2jf2drLxRRwRL33SksQbzAQ/qrLd7GP3sCGqvKxWY2FPdFyf8kx
\nGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoP5ph7JNF3Tm/JH/fbwjpp7dt
\nj7i8EzkRUNE6alMHOFEeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\nniWgTWHXPZxUQaYhpxO6+IMI6DpExiDgBAkMzJGlv57yQiYWU+wthAr9urbWYdGZ
\nlS6VjoTkF6r7VZolLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrpfHB5utBU
\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jr4eB
\n1lVQhELGI9CbKsdzKM71GyElmix/T7FnSHIWIho1qVo6AQYduNWNnAQD15pr8KAd
\nXGXAZZ1FQcb3KYa+2fliermazdOTWjYZ0tGqZnXkEeMdSLkmlqCRigWhGQKBgDak\n/
735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha\nnfi7FPMdvGl8ioYbvlHFHf
+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9o
\nnjHjWB7pQUUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDJKxfciXKcsYr9lluk
\nfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd\nn3fy
+1rCUwzOp9LSjtYf4ege\n-----END PRIVATE KEY-----",
    "type": "server",
    "update_time": "2017-02-25 09:35:27",
    "source": "CCE",
    "protection_status": "consoleProtection",
    "protection_reason": "Note that the resource is created by the CCE. Modify the resource on
the CCE portal. Otherwise, services may be interrupted."
  }
},
"instance_num": 1
}

```

● Example response 2

```

{
  "certificates": [
    {
      "description": "Push by SSL Certificate Manager",
      "domain": null,
      "id": "ed40e8ea9957488ea82de025e35b74c0",
      "name": "certForSonar9",
      "certificate": "-----BEGIN CERTIFICATE-----
MIIFizCCBHOGAwIBAgIQBlQycV3bWsVsCttw5rgRjANBgkqhkiG9w0BAQsFADBu
MQswCQYDVQQGEwJVUzEVMBMGA1UEChMMRGlnaUNlcnQgSW5jMRkwFwYDVQQLExB3
d3cuZGlnaWNlcnQuY29tMS0wKwYDVQQDEyRfBmNyeXB0aW9uIEV2Zj5j52hlcmUg
RFYgVExTIENBIC0gRzEwHhcNMTgwNzEwMDAwMDAwWWhcNMTkwNzEwMTIwMDAwWjAU

```

```
MRIwEAYDVQDEwlpY2UxMjMudGswggEiMA0GCSqGSIsb3DQEBAQUAA4IBDwAwggEK
AoIBAQCtTDLQMoAvylnR6X1dihhNwbdGesbMW6NZX7ffpj9XrB3Kcqqxlz4VmH9
PntvrlJNeolgLqDZZc4zKbUkmqxy1dvGDs41coKzdtc9Iq23GVK48wfsenk5r50
afyU52R1JlSHDOhiDhHOSyhrOzc2GreLrByWKFUaAue6rTnyMbzQaSPtrTAqsURZ
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dE+yck/1YLpQ0dfmUVyaAYca1zAdBgNVHQ4EFgQUEFavzYXBNbiHBchbaKcUKad+
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/wQEAwiFoDAdBgNVHSUEFJAUBggrBgEFBQcDAQYIKwYBBQUHAWIwTAYDVR0gBEUw
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cnQuY29tL0NQUzAlBgZngQwBAGewgYEGCCsGAQUFBwEBBHUwczAlBggrBgEFBQcw
AYYZaHR0cDovL29jc3AyLmRpZ2ljZXJ0LmNvbTBKbGgrBgEFBQcwoAoY+aHR0cDov
L2Nhy2VydhMuZGlnaWNIcnQuY29tL0VUy3J5cHRpb25FdmVyeXdoZXJIRFZUTFNND
QS1HMS5jcnQwCQYDVR0TBAlwADCCAQQGcisGAQQB1nkCBAIEgfUEglfA8AB2AKS5
CZC0GFgU7sTosxncAo8NZgE+RvfuON3zQ7IDdwQAAABZiOnLCIAAAQDAEwRQIh
AJX6gCXNggPdFofDdtZpZlYr64TTrR/+b9QKkhyJ2EjBAIAWgu3BG2QK9tWQXpUN
IFadc0nvqmDovabg5nmRMan2mQB2Ald1v+dZfPiMQ5lfvNu/1aNR1Y2/0q1YMG0
6v9eoiMPAAABZiOnLQEAAQDAEwRQIhAJVRe/7n88dD6KdhNrd4LdfJGARQNmta
Y/K2dFDOXPSfAiBOLrWW8unHOL25RWHJU7Ost3XkNhQYtrLDJrnzo/9kZzANBgkq
hkiG9w0BAQsFAAOCAQEAEqtX9cHmj4OnNAk0IGmF3nKS/u/UgGsY4EJfXwQY2bTZ
PCkqxQOA6HEX59vJ+UilTojrNDi0WskRm/8SKBhtmRwzWx3ile8KiR6ffQhPUtV
XHZcTfAfo47c7axqon8vumMLEv1PxVImivQ446K7z3kGm34dhMYs4Gz2gTl8IKt
900EgejuhAs5Wlvp1BK8HlYIb5+mw+cgkUC9KtALs5qVbWzogb0bS20KaYarGcu
otcZAOMeJdBFWnpzhr1fxmjaNY4u4hrgPZSTU/iBjdHapoza3zAffxysmGyqs9dR
jFyxZeR4scz8GqSTFviNdH9jvtDjkdAC5hfMaB811Q==
-----END CERTIFICATE-----
-----BEGIN CERTIFICATE-----
MIIEqjCCASKgAwIBAgIQAnmsRYvBskWr+YBTzSybsTANBgkqhkiG9w0BAQsFADBh
MQswCQYDVQQGEwJVUzEVMBMGA1UEChMMRGlnaUNlcnQgSW5jMRkwFwYDVQQLEwB3
d3cuZGlnaWNIcnQuY29tL0NQUzAlBgZngQwBAGewgYEGCCsGAQUFBwEBBHUwczAlBggr
BQcDAQYIKwYBBQUHAWIwTAYDVR0gBEUwQzA3BglghkgBhv1sAQIwKjAoBggrBgEFBQcC
ARYcaHR0cHM6Ly93d3cuZGlnaWNIcnQuY29tL0VUy3J5cHRpb25FdmVyeXdoZXJIRFZUTFNND
QS1HMS5jcnQwCQYDVR0TBAlwADCCAQQGcisGAQQB1nkCBAIEgfUEglfA8AB2AKS5
CZC0GFgU7sTosxncAo8NZgE+RvfuON3zQ7IDdwQAAABZiOnLCIAAAQDAEwRQIh
AJX6gCXNggPdFofDdtZpZlYr64TTrR/+b9QKkhyJ2EjBAIAWgu3BG2QK9tWQXpUN
IFadc0nvqmDovabg5nmRMan2mQB2Ald1v+dZfPiMQ5lfvNu/1aNR1Y2/0q1YMG0
6v9eoiMPAAABZiOnLQEAAQDAEwRQIhAJVRe/7n88dD6KdhNrd4LdfJGARQNmta
Y/K2dFDOXPSfAiBOLrWW8unHOL25RWHJU7Ost3XkNhQYtrLDJrnzo/9kZzANBgkq
hkiG9w0BAQsFAAOCAQEAEqtX9cHmj4OnNAk0IGmF3nKS/u/UgGsY4EJfXwQY2bTZ
PCkqxQOA6HEX59vJ+UilTojrNDi0WskRm/8SKBhtmRwzWx3ile8KiR6ffQhPUtV
XHZcTfAfo47c7axqon8vumMLEv1PxVImivQ446K7z3kGm34dhMYs4Gz2gTl8IKt
900EgejuhAs5Wlvp1BK8HlYIb5+mw+cgkUC9KtALs5qVbWzogb0bS20KaYarGcu
otcZAOMeJdBFWnpzhr1fxmjaNY4u4hrgPZSTU/iBjdHapoza3zAffxysmGyqs9dR
jFyxZeR4scz8GqSTFviNdH9jvtDjkdAC5hfMaB811Q==
-----END CERTIFICATE-----",
    "type": "server",
    "create_time": "2019-03-03 16:32:30",
    "private_key": "-----BEGIN RSA PRIVATE KEY-----
MIIEpQIBAAKCAQEArUw5UDKAL8ij0el9XyoYtcG3RnrGzFujWV+336Y/V6wdyggq
pccyQFZh/T57b66SyTXqJYC6g2WXOMym1JJqsWNXbxg7ONXKCs3bXPSINtXISuPM
H3rJ5Oa+dGn8I0dkdSZUhwzoYg4Rzksoazs3Nhq3i6wclihVGgLnuaq058jG80Gkj
7a0wKrFEWcHJiekdwOicKJDoMVvUruNbnz0lhZDIMcoCsRAS8yCS40aglob2KMW7
E8qJW+o8KcOB+r3ESBHBQILPFAKvkaBCo8u3jj91FJtORfjpDr14a5cRKId5v65c
BND5IZZpvQ4AWn2G98U/zLU9IUUnwiUB4CHLHQIDAQABAoIBAGs5r1SompP2OwA8
virwVRXdPUQ5oxvbuTPys+A59RxxVIU8kFW+qJ4fjMYysOFrXLtOtg+5tK20YBru
1ZLVfVqAowrELXB/J2ID+WTMkLORLsNlq1kW+nC9LL6PDY98llw/n7FoFSkGI5HT
AxFGNGUvpr2vlojuL6nGfmcM47uscJ9aP6Ijxr4p70dhPVZBdnMnXYwRkB3dZt/
E0B/p8J5i3oo5Rucv4DOFB+01wXGAVyx5/zce+NZdhyrivkj3hHV55SxGhVWzWhj
a3dAlbpKwYgflJj0inRdJYmIjBdbG2HFix7+ncBg8B2oerJXC6/fANwRGU5/LZU
5xuPVWkCgYEA6an8TY1uniGLYL5aBJ16Tx4usqMyTxr/T4zkQyftRPMt+ZuxVQHl
```



```
GHsg7XvLFNd04MBZxtkZXaYVcpOm7OUYcl0i9ZakWXXoXcBtn1Oom3gz/7RjAUUnp
k+myvxCUSQZJsz4u3QBtyPVyYnYBFXrKqdKfcYyG85+yQVHBNMvrdvMCgYEAvd0C
hFpm83ha+VQp+9XN1DYZNUyqhibj/E3X9jAn+gDbzlKxw/D9en2RILQYUrl8+il8
QKk4cfOxJYStqfptz8QBPVeLajDN67zJ0Rk8AB50HHcNSU8uFkaO8KxsvVjblS
+JltqfJAEraXLinbp1Fxcg9DsQdMd6cw2DmrWa8CgYEA1UjJOuzo80i4HYWDC4Vn
OEK3o22do+WqmEVlSfsG9BH5HEdGvE7V3EO/6aY+1/ZXBDPvH8mRAs9v8lbeXow7
hWCiYzFb5jre8HyOU4l8dPUCmdxhJrL913rRluASSqBlet32ztuXCnWzP1X4nBj
/yF3UqFQKZ7SihcDAZVWo4sCgYEAj7al/BcNzlcynX2mldhdh583b4/LL+YCNm2Z
5eDHscZKmx8fLcjRpZE8dXagPqXmwjtj6E1vDvQWP9m06VDNCthFHB+nO0tLmidSk
evmbScuiaTRmmbJf2IThY0hlqNsc7PgKF2DTkIstEr0hLDFE8Z6FN6f0PiDfMcbD
Ax6L5EMcGYEA0+qhuQftKQkGdbXX9r3H8N0TVh27ByfL3kKVYy0dUJMvsOaQ6d97
8mEhYhrYt88f1sFsPM7G09XpCcBXwiKxw8+CDt9auD4r1snBnlPqMPmanF4UDXH
L7s+4it+nIQy24P6g1PihztsM+HD2UCERBiYUdRK8Q9GGHdZofJk9Y=
-----END RSA PRIVATE KEY-----
",
  "update_time": "2019-03-03 16:32:30",
  "admin_state_up": true,
  "tenant_id": "601240b9c5c94059b63d484c92cfe308",
  "expire_time": "2019-07-10 12:00:00",
  "source": "CCE",
  "protection_status": "consoleProtection",
  "protection_reason": "Note that the resource is created by the CCE. Modify the resource on
the CCE portal. Otherwise, services may be interrupted."
},
{
  "description": null,
  "domain": "www.elb.com",
  "id": "ef4d341365754a959556576501791b19",
  "name": "certificate_28b824c8bbe419992fb7974b2911c72",
  "certificate": "-----BEGIN CERTIFICATE-----
MIIDpTCCAo2gAwIBAgIJAKdmmOBYnFvoMA0GCSqGSIb3DQEBCwUAMGkxZAJBgNV
BAYTAh4MQswCQYDVQIDAJ4eDELMAkGA1UEBwwCeHgxZCZAJBgNVBAAoMAnh4MQsw
CQYDVQQLDAJ4eDELMAkGA1UEAwwCeHgxGTAXBgkqhkiG9w0BCQEWCh4QDE2My5j
b20wHhcNMTcxMjA0MDM0MjQ5WWhcNMjA0MjA0MDM0MjQ5WjBpMQswCQYDVQGEwJ4
eDELMAkGA1UECAwCeHgxZCZAJBgNVBACMAh4MQswCQYDVQKDAJ4eDELMAkGA1UE
CwwCeHgxZCZAJBgNVBAMMAh4MRkwFwYJKoZIhvcNAQkBFgp4eEAXNjMuY29tMIIIB
lJANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAwZ5UJULajWr7p6FVwGRQJFN
2s8tZ/6LC3X82fajpVsYqF1xqEuUDndDXVD09E4u83MS6HO6a3bIVQDp6/klnYld
iE6Vp8HH5B5SKaCWKvG8lGwG1UM9wZFnlyi14KgmpIFmCu9nA8yV/6MZAe6RSDmb
3iyNBmiZ8aZhGw2p1YwR+15MVqFFGB+7ExkziROi7L8CFCyCezK2/oOOvQsH1dz
Q8z1JXWdg8/9Zx7Ktvgwu5PQM3cJtSHX6iBPOkMU8Z8TugLITqQXKZOEGwajwvQ5
mf2DPkVgM08XAgALJcLigWd513koAdtJd5v+9irw+5LAuO3JclqwTvw7u/YwwID
AQABo1AwTjAdBgNVHQ4EFgQUo5A2tlu+bcUfvGTD7wmEkhXKFjcwDAYDVR0TBAlUwAwEB/zANBgkqhkiG9w0B
AQsFAAOCAQEAWJ2rS6Mvlqk3GfEpboezx2J3X711z8Sxoqg6ntwB+rezvK3mc9H0
83qcVeUcoH+0A0ISHyFN4FvRQL6X1hEheHarYwJK4agb231vb5erasuGO463eYEG
r45fTuOm7SyiV2xxbaBKRxJtpBp4WLL/s+LF+nkKjaOxkmxUX0sM4CTA7uFjypY
c8Tdr8lDDNqoUtMD8BrUCJi+7lmMXRcC3Qi3oZJW76ja+kZA5mKVFPd1ATih8TbA
i34R7EQDtFeiSvBdeKRspP8c0KT8H1B4IXNkkCQs2WX5p4lm99+ZLd4glw8x6ic
i1YhgnQbn5E0hz55OLu5jvOkKQjPCW+8Kg==
-----END CERTIFICATE-----",
  "type": "server",
  "create_time": "2018-09-28 03:00:47",
  "private_key": "-----BEGIN RSA PRIVATE KEY-----
MIIEowIBAAKCAQEAWZ5UJULajWr7p6FVwGRQJFN2s8tZ/6LC3X82fajpVsYqF1x
qEuUDndDXVD09E4u83MS6HO6a3bIVQDp6/klnYldiE6Vp8HH5B5SKaCWKvG8lGwG1
UM9wZFnlyi14KgmpIFmCu9nA8yV/6MZAe6RSDmb3iyNBmiZ8aZhGw2p1YwR+15
MVqFFGB+7ExkziROi7L8CFCyCezK2/oOOvQsH1dzQ8z1JXWdg8/9Zx7Ktvgwu5PQ
M3cJtSHX6iBPOkMU8Z8TugLITqQXKZOEGwajwvQ5mf2DPkVgM08XAgALJcLigWd5
13koAdtJd5v+9irw+5LAuO3JclqwTvw7u/YwwIDAQABAoIBACU9S5fjD9/jTmXA
DRs08A+gGgZUxLn0xk+NAPX3LyB1tfdkCaFB8BccLzO6h3KZuwQOBPv6jkdvEdbx
Nwyw3eA/9GJslvKiHcOrejdyPyMaw9l8MA7NbXHAjrY7KpQDQyk6sx+aUTcy5jg
iMXLWdwXYHhJ/1HVOo603oZyiS6HZeYU089NDUCX+1Sji3e5Ke0gPVXEqCz1O11/
rh24bMxnwZ04PKBWdcMBN5Zf/4ij9vrZE+fzW7vGBO48A5lvZxWU2U5t/OZQRtN
1uLOHmMFa0FIF2aWbTVfwdUWAFsvAOkHj9V8BXOUwKOUuEktdkfAlvrXmsFrO/H
yDeYYPkCgYEA/S55CBbR0sMXpS5Z6uRn8JHApZJhgkgvYr+FqDUq/e92nAzf01P
RoEBUajwrnf1ycevN/SDfbtWzq2XJGqHwDjmtP016b7KbsC6BdRcH6dnOYh31jgA
vABMIP3wzI4zSVTyxRE8LDuboytF1mScEv5tHYPTZnwrpLDnLQhywcGyEAW8Yc
Uk/eiFr3hfH/ZohMfv5p82Qp7DNIGRzw8YtVG/3+vNXrAXW1VhugNhQY6L+zLJC
```

```
aKn84ooup0m3YcG0hVnNqJuvzfsuzQgtjTXyaE0cEwsjUusOmiuj09Vvx/3U7siK
Hdj2iCPCvQ6Q8tdi8jV320gMs05AtaBkZdsiWUCgYEAtLw4Kk4f+xTKDFsrLUNf
75wcqhWVvBiwBp7yQ7UX4EysJPKZcHMRTk0EEcAbpyaJZE3i44vjp5ReXIHNLmfPs
uvl34J4Rfot0LN3n7cFrAi2+wpNo+MOBwrNzpRmijGP2uKKrq4JiMjFbKV/6utGF
Up7VxfwS904JYpqGaZctilECgYA1A6nZtF0riY6ry/uAdXpZHL8ONNqRZtWoT0kD
79otSVu5iSiRbaGcXsDExC52oKrSDAgFtbqQUiEOFG09UcXfoR6HwRkba2CiDwve
yHQLQI5Qrdxz8Mk0gIrNrSM4FAmcW9vi9z4kCbQyoC5C+4gqeUURpDikQBWP2Y4
2ct/bQKBgHv8qCsQTZphOxc31BJPa2xVhuv18cEU3XLURvFUZ/1f43JhLp7gynS2
ep++LKUj9D0VGXY8bqvffjbcECoCeU85vl8NpCXwe/LoVoln+7KaVIZMwqoGMfgNI
nEqm7HWkNxHhf8A6En/ljleuddS1sf9e/x+TJN1Xhnt9W6pe7Fk1
-----END RSA PRIVATE KEY-----",
  "update_time": "2018-09-28 03:00:47",
  "admin_state_up": true,
  "tenant_id": "601240b9c5c94059b63d484c92cfe308",
  "expire_time": "2020-12-03 03:42:49",
  "source": "CCE",
  "protection_status": "consoleProtection",
  "protection_reason": "Note that the resource is created by the CCE. Modify the resource on
the CCE portal. Otherwise, services may be interrupted."
}
],
"instance_num": 2
}
```

Status Code

For details, see [Status Codes](#).

5.8.3 Querying Details of a Certificate

Function

This API is used to query details about a certificate.

Constraints

None

URI

GET /v2/{project_id}/elb/certificates/{certificate_id}

Table 5-180 Parameter description

Parameter	Mandator y	Type	Description
project_id	Yes	Strin g	Specifies the project ID.
certificate_id	Yes	Strin g	Specifies the certificate ID.

Request

None

Response

Table 5-181 Parameter description

Parameter	Type	Description
id	String	Specifies the certificate ID.
tenant_id	String	Specifies the ID of the project where the certificate is used. The value contains a maximum of 255 characters.
admin_state_up	Boolean	Specifies the administrative status of the certificate. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">● true: Enabled● false: Disabled
name	String	Specifies the certificate name. The value contains a maximum of 255 characters.
description	String	Provides supplementary information about the certificate. The value contains a maximum of 255 characters.
type	String	Specifies the certificate type. The value can be: <ul style="list-style-type: none">● server: indicates the server certificate.● client: indicates the CA certificate.
domain	String	Specifies the domain name associated with the server certificate. The value contains a maximum of 100 characters.
private_key	String	Specifies the private key of the server certificate in PEM format.
certificate	String	Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter type determines whether a public key or CA certificate is required. Both types of certificates are in PEM format.
expire_time	String	Specifies the time when the certificate expires. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.

Parameter	Type	Description
create_time	String	Specifies the time when the certificate was created. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.
update_time	String	Specifies the time when the certificate was updated. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.
source	String	Specifies the source of the certificate. The default value is null . Constraints: If scm_certificate_id is not left blank and source is not specified, the default value is scm .
protection_status	String	Specifies the protection status. The value can be: <ul style="list-style-type: none"> ● nonProtection: The load balancer is not protected. ● consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console. Default value: nonProtection
protection_reason	String	Specifies why the modification protection is enabled.

Example Request

- Example request: Querying details of a certificate
GET [https://\[Endpoint\]/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/certificates/23ef9aad4ecb463580476d324a6c71af](https://[Endpoint]/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/certificates/23ef9aad4ecb463580476d324a6c71af)

Example Response

- Example response 1

```
{
  "certificate":
  "-----BEGIN CERTIFICATE-----
  \nMIIC4TCCAcmgAwIBAgI CERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxM MTXID
  \nb21wYW55IENBMB4XDTE4MDcwMjEzMTU0N1oXDTE4MTExNzEzMTU0N1owFDESMBAG
  \nA1UEAwJbG9jYWxob3N0MIIlBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
  \n0FQGzi3ucTX+DNud1p/b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5
  \nU0NqPQZKUrZz3rQeLN9mYiUTJZPutYlFDDbB8CtlgV+eyU9yYjSlWx/Bm5kWNPh9
  \n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
  \nIAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/K
  \ny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPILZUUn7yw3nkOOtLMI28IEv0Wyy
  \nYd7CMJQkS1NPJBKNOGFR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
  \nhwQKuUvJhWR/AAABMBMGGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsSQGSiB3DQEBcWUA
  \nA4IBAQA8IMQJxaTey7EjXtRLSVIEAMftAQP6GjjNQuvIBQYUDauDT4W2XUZ5wAn
  \njiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKIodl9I5I98TGKI6OoDa
  \nezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNjYvPRLYLzp1HMnl6hjkPk4PCZ
```

```
\nwKnhA0dlScati9Cct3UzXSNJOSLaKdHErH08lqd+1BchScxCfk0xNITn1HZZGml
\n+vbmunok3A2luc14rnsrcbkGyqXGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mz
\niYsGDVN+9QBd0eYUHce+77s96i3l
\n-----END CERTIFICATE-----",
  "create_time": "2017-02-25 09:35:27",
  "expire_time": "2045-11-17 13:25:47",
  "description": "description for certificate",
  "domain": "www.elb.com",
  "id": "23ef9aad4ecb463580476d324a6c71af",
  "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
  "admin_state_up": true,
  "name": "https_certificate",
  "private_key":
"-----BEGIN PRIVATE KEY-----
\nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBAgEAAoIBAQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4j+B7kYwsMhRcgdcJ8KcN1nfzTvl2ksXITQ2o9BkpStnPe
\nbtB4s32ZiJRMlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nnMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8Icq39buNplgDOWzEP5AqzXt
\nnCOFYn6RTH5SRug4hKNN7sT1eYMsLHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl
\nnZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjwbwG5/RbJh3siwlCRLU08k
\nnEo04Z9H/AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD605XY2fUieh8/HL
\nnfvCArftGgMaYWPSNcJRMXB7tPwpQu19esjz4Z/cR2Je4FTLPrffGUsHFgZjv5OQB
\nnZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
\nnciu9YklnNEHu6uRj5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
\nnEGpfYI6AdHlwFzCT/RNaxhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7Ale
\nnkrGuPtfV1vWklg+bUFhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\nnXUqgCz08MKeV2jf2drLxRRwRL33SksQbzAQ/qRLd7GP3sCGqvkxWY2FPdFYf8kx
\nnGcCeZPcleZYQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpp7dt
\nnJ7n8EzkRUNE6alMHOFeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\nniWgTWHXPZxUQaYhpjXo6+LMI6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
\nnIS6VjoTkF6r7VZoILXX0fbuXh6lm8K8lQRfBpjff56p9phMwaBpDNDrfpHB5utBU
\nnxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
\nn1lVQhELG9CbKsdzKM71GyElmix/T7FnJSHIwlho1qVo6AQyduNWnAQD15pr8KAd
\nnXGXAZZ1FQcb3KYa+2fflERmazedOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
\nn/735uP20KKqhNehZpC2dJei7OoilRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
\nnfl7FPMdvGl8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\nn7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJKD4wHW54PwD4Ctfk9o
\nnjHjWB7pQlUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDjKxfciXKcsYr9lluk
\nnfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd
\nn3fy+1rCUwzOp9LSjtYf4ege
\n-----END PRIVATE KEY-----",
  "type": "server",
  "update_time": "2017-02-25 09:35:27",
  "source": "CCE",
  "protection_status": "consoleProtection",
  "protection_reason": "Note that the resource is created by the CCE. Modify the resource on the CCE
portal. Otherwise, services may be interrupted."
}
```

Status Code

For details, see [Status Codes](#).

5.8.4 Updating a Certificate

Function

This API is used to update a certificate.

URI

PUT /v2/{project_id}/elb/certificates/{certificate_id}

Table 5-182 Parameter description

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

Request

Table 5-183 Parameter description

Parameter	Mandatory	Type	Description
admin_state_up	No	Boolean	Specifies the administrative status of the certificate. This parameter is reserved, and the default value is true .
name	No	String	Specifies the certificate name. The value contains a maximum of 255 characters.
description	No	String	Provides supplementary information about the certificate. The value contains a maximum of 255 characters.

Parameter	Mandatory	Type	Description
domain	No	String	<p>Specifies the domain name associated with the server certificate. The default value is null.</p> <p>The value contains a maximum of 100 characters.</p> <p>Value range:</p> <ul style="list-style-type: none">• A common domain name contains 0 to 100 characters and consists of several labels separated by periods (.). Each label can contain a maximum of 63 characters, including letters, digits, and hyphens (-), and must start and end with a letter or digit.• In addition to the requirements for common domain names, a wildcard domain name can start with an asterisk (*). This parameter takes effect only when type is set to server. <p>NOTE This parameter takes effect only when type is set to server.</p>
private_key	No	String	<p>Specifies the private key of the server certificate. The value must be PEM encoded.</p> <ul style="list-style-type: none">• This parameter will be ignored if type is set to client. A CA server can still be created and used normally. This parameter will be left blank even if you enter a private key that is not PEM encoded.• This parameter is mandatory only when type is set to server. If you enter an invalid private key, an error is returned.
certificate	No	String	<p>Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter type determines whether a public key or CA certificate is required.</p> <p>Both types of certificates are in PEM format.</p>

Parameter	Mandatory	Type	Description
source	No	String	Specifies the source of the certificate. The default value is null . Constraints: If scm_certificate_id is not left blank and source is not specified, the default value is scm .
protection_status	No	String	Specifies the protection status. The value can be: <ul style="list-style-type: none"> • nonProtection: The load balancer is not protected. • consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console. Default value: nonProtection
protection_reason	No	String	Specifies why the modification protection is enabled.

Response

Table 5-184 Parameter description

Parameter	Type	Description
id	String	Specifies the certificate ID.
tenant_id	String	Specifies the ID of the project where the certificate is used. The value contains a maximum of 255 characters.
admin_status	Boolean	Specifies the administrative status of the certificate. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none"> • true: Enabled • false: Disabled
name	String	Specifies the certificate name. The value contains a maximum of 255 characters.

Parameter	Type	Description
description	String	Provides supplementary information about the certificate. The value contains a maximum of 255 characters.
type	String	Specifies the certificate type. The value can be: <ul style="list-style-type: none">• server: indicates the server certificate.• client: indicates the CA certificate.
domain	String	Specifies the domain name associated with the server certificate. The value contains a maximum of 100 characters.
private_key	String	Specifies the private key of the server certificate in PEM format.
certificate	String	Specifies the public key of the server certificate or CA certificate used to authenticate the client. The value of parameter type determines whether a public key or CA certificate is required. Both types of certificates are in PEM format.
expire_time	String	Specifies the time when the certificate expires. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.
create_time	String	Specifies the time when the certificate was created. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.
update_time	String	Specifies the time when the certificate was updated. The UTC time is in <i>YYYY-MM-DDTHH:MM:SS</i> format.
source	String	Specifies the source of the certificate. The default value is null . Constraints: If scm_certificate_id is not left blank and source is not specified, the default value is scm .

Parameter	Type	Description
protection_status	String	Specifies the protection status. The value can be: <ul style="list-style-type: none"> nonProtection: The load balancer is not protected. consoleProtection: Modification protection is enabled to avoid that resources are modified by accident on the console. Default value: nonProtection
protection_reason	String	Specifies why the modification protection is enabled.

Example Request

- Example request: Updating a certificate

```
PUT https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/certificates/23ef9aad4ecb463580476d324a6c71af
{
  "certificate":
  "-----BEGIN CERTIFICATE-----
  \nMIIC4TCCAcmgAwIBAgIcERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
  \nb21wYW55IENBMB4XDTE4MDcwMjEzMTU0N1oXDTE4MTExNzEzMTU0N1owFDESMBAG
  \nA1UEAwJbG9jYWxob3N0MIIlBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
  \n0FQGzi3ucTX+DNud1p/b4XVM6I3rY7+Cfge5GMLDIUXIHXCfcgp19Z3807yNpLF5
  \nUONqPQZKUrZz3rQeLN9mYiUTJZPutYlFDDbB8CtIgv+eyU9yYJslWx/Bm5kWNPh9
  \n7B9Yu9pbb2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
  \nlAzlxD+QM6l7QjhWj+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/K
  \ny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPILZUUn7yw3nkOOtLMI28IEv0Wy
  \nYd7CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
  \nhwQKuUvJhWR/AAABMBMGA1UdJQMMAoGCCsGAQUFBwMBMA0GCsGQSIb3DQEBCwUA
  \nA4IBAQA8IMQJxaTey7EjXtRLSVIEAMftAQP6jijNQuvIBQYUDauDT4W2XUz5wAn
  \njiOyQ83va672K1G9s8n6xIH+xwwdSNnozaKzC87vwSeZKI0dI9I5I98TGKl6OoDa
  \nezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNjYvPRLYLzp1HMnl6hkjPk4PCZ
  \nwK nha0dlScati9Cct3UzXSNJOSLaIKdHERH08lqd+1BchScx Cfk0xNITn1HZZGml
  \n+vbmunok3A2lucl14rnsrbcKGYqXGikySN6B2cRLBDK4Y3wChiW6NvYtVqcx5/mZ
  \niYsGDVN+9QBd0eYUHce+77s96i3l
  \n-----END CERTIFICATE-----",
  "description": "description for certificate",
  "domain": "www.elb.com",
  "name": "https_certificate",
  "private_key":
  "-----BEGIN PRIVATE KEY-----
  \nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M
  \n253Wn9vhdUzojetv4J+B7kYwsMhRcgdcJ8KcN1nfzTvl2ksXITQ2o9BkpStnPe
  \ntB4s32ZiJRMlk+61iUUMNhsWk2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
  \nMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8Icq39buNplgDOWzEP5AzqXt
  \nCOFYn6RTH5SRug4hKNN7sT1eYMSlHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl
  \nZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwCRLU08k
  \nEo04Z9H/AgMBAECCggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60sXY2fUieh8/Hl
  \nfvCArftGgMaYWPNSNCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUsHFgZjv5OQB
  \nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
  \nciu9YklnNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
  \nEGpfYI6AdHIwFZcT/RNAXhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7Ale
  \nkrquPtfV1vWklg+bUfHgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
  \nXUqgCz08MKeV2jf2drLxRRwRL33SksQbzAQ/qrLdT7GP3sCGqvkxWY2FPdFyf8kx
  \nGcCeZPcleZYQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpp7dt
  \nJ7n8EzkRUNE6alMHOFEeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
  \niWgTWHXPZxUQaYhpxJo6+lMI6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
```

```
\nIS6VjoTkF6r7VZoILXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
\n1lVQhELG9CbKsDzKM71GyElmix/T7FnSHIWIho1qVo6AQyduNWnAQD15pr8KAd
\nXGXAZZ1FQcb3KYa+2fflERmazdOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
\n/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
\nfl7FPMdvGl8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLaOGBAJKD4wHW54PwD4Ctfk9o
\nhJjWB7pQLUYpTZO9dm+4fpCMn9Okf43AE2yAOaP94GdzdJkxfciXKcsYr9lIuk
\nfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd
\n3fy+1rCUwzOp9LSjtYf4ege
\n-----END PRIVATE KEY-----"
}
```

Example Response

- Example response 1

```
{
  "certificate": "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgICEREWdQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nb21wYW55IENBMB4XDTE4MDcwMjEzMTU0N1oXDTE4MTExNzEzMTU0N1owFDESMBAG
\nA1UEAwWJbG9jYXxob3N0MIIIBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAn0FQZi3ucTX
\n+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5\nu0NqPQZKUrZz3rQeLN9mYiUTJZPutYlFDDb
B8CtIgv+eyU9yYJslWx/
Bm5kWNPh9\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\nlAzlsx+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/K
\nny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPLZUUn7yw3nkOOTLMI28IEv0Wy
\nYd7CMJQkS1NPjBKNogFR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\n\nhwQKuUvJhWR/AAABMBMGAA1UdJQMMMAoGCCsGAQUFBwMBMAoGCCsGSIb3DQEBCCwUAA
\nA4IBAQA8IMQJxaTey7EjXtRSLVIEAMftAQP6jijNQuviBQYUDauDT4W2XUz5wAn
\n\njiOyQ83va672K1G9s8n6xlH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKl6OoDa
\n\nnezmcwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRLYlp1HMnl6hkjPk4PCZ
\n\nwKnhaoDlScati9Cct3UzXSNJOSLalKdHERH08lqd+1BchScxCFk0xNItn1HZZGmln
\n\n+vbmunok3A2lucl14rnsrckGYqXGikySN6B2cRLBDK4Y3wChiW6NVYtVqxc5/mZ\n\niYsGDVN
+9QBd0eYUHce+77s96i3\n\n-----END CERTIFICATE-----",
  "expire_time": "2045-11-17 13:25:47",
  "create_time": "2017-02-25 09:35:27",
  "update_time": "2017-02-25 09:38:27",
  "id": "23ef9aad4ecb463580476d324a6c71af",
  "description": "description for certificate",
  "domain": "www.elb.com",
  "type": "server",
  "admin_state_up": true,
  "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
  "name": "https_certificate",
  "private_key": "-----BEGIN PRIVATE KEY-----
\nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5Xf4M
\n\n253Wn9vhdUzojetjv4j+B7kYwsMhRcgdcJ8KcnX1nfzTl2ksXlTQ2o9BkpStnPe\n\nntB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\n\nMD30gLh6QoP3cq7PGWcuZKV7hd1tjCTQukwMvqV8lCq39buNplgDOWzEP5AqzXt
\n\nCOFYn6RTH5SRug4hKNN7st1eYMsLHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Ch\n\n\nZAPYUBkl/
0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjwbgS/RbJh3slwLCRLU08k\n\n\nEo04Z9H/
AgMBAAEcggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\n\nfvCArftGgMaYWPNSNCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFgZjv5OQB
\n\nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
\n\nnciu9YklnNEHu6uRJ5g/eGGX3KQynTvIhnOVGAJvTXcoU6fm7gYdHAD6jk9lc9M\n\n\nEGpfYI6AdHlWfZcT/
RNAXhP82lg2gUJSgAu66FFDjMwQXKbafKdP3zq4Up8a7Ale\n\n\nnkrguPtfV1vWklg
+bUFhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\n\nXUqgCZ08MKeV2jf2drlxRRwRl33SksQbzAQ/qrLd7GP3sCGqvkvWY2FPdFyF8kx
\n\nGcCeZPcleZYQAM41pjtsaM8tVbLWVR8UtGBUqoPSPH7JNF3Tm/JH/fbwjpp7dt
\n\n7n8EzkRUNE6alMHOFeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9vT7mTgKYK4aLr
\n\nniWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7yQiyWU+wthAr9urbWYdGZ
\n\nIS6VjoTkF6r7VZoILXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
\n\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
\n\n1lVQhELG9CbKsDzKM71GyElmix/T7FnSHIWIho1qVo6AQyduNWnAQD15pr8KAd
\n\nXGXAZZ1FQcb3KYa+2fflERmazdOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak\n\n\n/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha\n\n\nfl7FPMdvGl8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\n\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLaOGBAJKD4wHW54PwD4Ctfk9o
```

```
\njHjWB7pQUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDjkxfciXKcsYr9Iluk  
\nfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd\n3fy  
+1rCUwzOp9LSjtYf4ege\n-----END PRIVATE KEY-----"  
}
```

Status Code

For details, see [Status Codes](#).

5.8.5 Deleting a Certificate

Function

This API is used to delete a certificate.

Constraints

If the target certificate is used by a listener, the certificate cannot be deleted, and 409 code will be displayed.

URI

DELETE /v2/{project_id}/elb/certificates/{certificate_id}

Table 5-185 Parameter description

Parameter	Mandator y	Type	Description
project_id	Yes	Strin g	Specifies the project ID.
certificate_id	Yes	Strin g	Specifies the certificate ID.

Request

None

Response

None

Example Request

- Example request: Deleting a certificate
DELETE https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/certificates/
23ef9aad4ecb463580476d324a6c71af

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

6 APIs (OpenStack)

6.1 Tag

6.1.1 Adding a Tag to a Load Balancer

Function

This API is used to add a tag to a specific load balancer for easier management.

Constraints

A maximum of 20 tags can be added to a load balancer.

Note the following when you add tags:

- If there are duplicate keys in the request body, an error is reported.
- If there are no duplicate keys in the request body but the key in the request body exists in the database, the key in the database is overwritten.

URI

POST /v2.0/{project_id}/loadbalancers/{loadbalancer_id}/tags

Table 6-1 Parameter description

Parameter	Mandator y	Type	Description
project_id	Yes	String	Specifies the ID of the project where the tag is used.
loadbalancer_id	Yes	String	Specifies the ID of the load balancer to which a tag is to be added.

Request Parameters

Table 6-2 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token

Table 6-3 Parameter description

Parameter	Mandatory	Type	Description
tag	Yes	Object	Specifies the tag. For details, see Table 6-4 .

Table 6-4 tag parameter description

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. <ul style="list-style-type: none"> Cannot be left blank. Can contain a maximum of 128 characters. The tag key of a load balancer must be unique.
value	Yes	String	Specifies the tag value. <ul style="list-style-type: none"> Can contain a maximum of 255 characters.

Response Parameters

None

Example Request

- Example request
 POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/7add33ad-11dc-4ab9-a50f-419703f13163/tags


```
{
  "tag": {
    "key": "key1",
    "value": "value1"
  }
}
```

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

6.1.2 Batch Adding Load Balancer Tags

Function

This API is used to batch add tags to a load balancer.

Constraints

A maximum of 20 tags can be added to a listener.

This API is idempotent.

- Note the following when you add tags:
 - If there are duplicate keys in the request body, an error is reported.
 - If there are no duplicate keys in the request body but the key in the request body exists in the database, the key in the database is overwritten.
 - The value of **action** must be **create**.

URI

POST /v2.0/{project_id}/loadbalancers/{loadbalancer_id}/tags/action

Table 6-5 Parameter description

Parameter	Mandator y	Type	Description
project_id	Yes	String	Specifies the ID of the project where the tag is used.
loadbalancer_id	Yes	String	Specifies the ID of the load balancer to which a tag is to be added.

Request Parameters

Table 6-6 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token

Table 6-7 Parameter description

Parameter	Mandatory	Type	Description
tags	Yes	Array	Lists the tags. For details, see Table 6-8 .
action	Yes	String	Specifies the operation type. The value can be one of the following: <ul style="list-style-type: none"> create: adds tags to the load balancer.

Table 6-8 tags parameter description

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. <ul style="list-style-type: none"> Cannot be left blank. Can contain a maximum of 128 characters. The tag key of a load balancer must be unique.
value	Yes	String	Specifies the tag value. <ul style="list-style-type: none"> Can contain a maximum of 255 characters.

Response Parameters

None

Example Request

- Example request

```
POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/7add33ad-11dc-4ab9-a50f-419703f13163/tags/action
{
```

```
"action": "create",
"tags": [
  {
    "key": "key1",
    "value": "value1"
  },
  {
    "key": "key2",
    "value": "value2"
  }
]
```

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

6.1.3 Batch Deleting Load Balancer Tags

Function

This API is used to batch delete tags from a load balancer.

Constraints

A maximum of 20 tags can be added to a listener.

This API is idempotent.

- Note the following when you delete the tags:
 - If the tag does not exist, the deletion is considered successful by default.
 - The value range of the tag character set is not verified.
 - The tag structure body cannot be missing, and the key cannot be left blank or set to an empty string.
 - The value of **action** must be **delete**.

URI

POST /v2.0/{project_id}/loadbalancers/{loadbalancer_id}/tags/action

Table 6-9 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the ID of the project where the tag is used.

Parameter	Mandatory	Type	Description
loadbalancer_id	Yes	String	Specifies the ID of the load balancer from which a tag is to be deleted.

Request Parameters

Table 6-10 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token.

Table 6-11 Request parameters

Parameter	Mandatory	Type	Description
tags	Yes	Array	Specifies the tags. For details, see Table 6-12 .
action	Yes	String	Specifies the operation type. The value can be: <ul style="list-style-type: none"> • delete: deletes tags from the load balancer.

Table 6-12 Parameter description

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag name. The tag: <ul style="list-style-type: none"> • Cannot be left blank. • Can contain a maximum of 128 characters. • Cannot have the same key with other tags added to the same load balancer.
value	Yes	String	Specifies the tag value. The value: <ul style="list-style-type: none"> • Can contain a maximum of 255 characters.

Response Parameters

None

Example Request

- Example request
POST `https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/7add33ad-11dc-4ab9-a50f-419703f13163/tags/action`

```
{
  "action": "delete",
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key2",
      "value": "value2"
    }
  ]
}
```

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

6.1.4 Querying All Tags of a Load Balancer

Function

This API is used to query all the tags of one load balancer.

URI

GET `/v2.0/{project_id}/loadbalancers/{loadbalancer_id}/tags`

Table 6-13 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the ID of the project where the tag is used.
loadbalancer_id	Yes	String	Specifies the ID of the load balancer whose tags are to be queried.

Request Parameters

Table 6-14 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token

Response Parameters

Table 6-15 Response parameters

Parameter	Type	Description
tags	Array	Lists the tags. For details, see Table 6-16 .

Table 6-16 tags parameter description

Parameter	Type	Description
key	String	Specifies the tag key. <ul style="list-style-type: none"> Cannot be left blank. Can contain a maximum of 128 characters. The tag key of a load balancer must be unique.
value	String	Specifies the tag value. <ul style="list-style-type: none"> Can contain a maximum of 255 characters.

Example Request

- Example request
GET https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/7add33ad-11dc-4ab9-a50f-419703f13163/tags

Example Response

- Example response

```
{
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key2",
      "value": "value2"
    }
  ]
}
```

Status Code

For details, see [Status Codes](#).

6.1.5 Querying the Tags of All Load Balancers

Function

This API is used to query the tags of all the load balancers.

URI

GET /v2.0/{project_id}/loadbalancers/tags

Table 6-17 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the ID of the project where the tag is used.

Request Parameters

Table 6-18 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token

Response Parameters

Table 6-19 Response parameters

Parameter	Type	Description
tags	Array	Lists the tags. For details, see Table 6-20 .

Table 6-20 tags parameter description

Parameter	Type	Description
key	String	Specifies the tag key. <ul style="list-style-type: none">• Cannot be left blank.• Can contain a maximum of 128 characters.• The tag key of a load balancer must be unique.
values	Array	Lists the tag values. <ul style="list-style-type: none">• Can contain a maximum of 255 characters.

Example Request

- Example request
GET https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/tags

Example Response

- Example response

```
{
  "tags": [
    {
      "key": "key1",
      "values": [
        "value1",
        "value2"
      ]
    },
    {
      "key": "key2",
      "values": [
        "value1",
        "value2"
      ]
    }
  ]
}
```

Status Code

For details, see [Status Codes](#).

6.1.6 Querying Load Balancers by Tag

Function

This API is used to query load balancers using tags.

Constraints

None

URI

POST /v2.0/{project_id}/loadbalancers/resource_instances/action

Table 6-21 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the ID of the project where the tag is used.

Request Parameters

Table 6-22 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token

Table 6-23 Parameter description

Parameter	Mandatory	Type	Description
tags	No	Array	Specifies the included tags. A maximum of 20 keys are allowed for each query operation, and each key can have a maximum of 20 values. The tag key cannot be left blank or set to an empty string. Each tag key and each tag value of the same tag key must be unique. For details, see Table 6-24 .
limit	No	Integer	Sets the page size. This parameter is available when action is set to filter . Both the default value and maximum value are 1000 , and the minimum value is 1 . The value cannot be a negative integer.

Parameter	Mandatory	Type	Description
offset	No	Integer	Specifies the index position. The query starts from the next load balancer indexed by this parameter. This parameter is not required when you query load balancers on the first page. The value in the response returned for querying the load balancers on the previous page will be included in this parameter for querying the load balancers on subsequent pages. This parameter is not available when action is set to count . If action is set to filter , the value must be a positive integer, and the default value is 0 .
action	Yes	String	Identifies the operation. The value can be filter or count . filter : indicates pagination query. count : indicates that all load balancers meeting the search criteria will be returned.
matches	No	Array	Specifies the search criteria. The tag key is the parameter to match, for example, resource_name . value indicates the value of the match content. The key is a fixed dictionary value. For details, see Table 6-25 .

Table 6-24 tags parameter description

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. It contains a maximum of 128 Unicode characters and cannot be left blank. (This parameter is not verified in the search process.)
values	Yes	Array	Lists the tag values. Each tag value can contain a maximum of 255 Unicode characters. The values are in the OR relationship. If no tag values in the list, the tag key is used for full search. If each value in the list starts with an asterisk (*), fuzzy match is performed based on the part after the asterisk.

Table 6-25 matches parameter description

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key for match. The value can be one of the following: <ul style="list-style-type: none"> • resource_name: indicates the resource name. • resource_id: indicates the resource ID.
value	Yes	String	Specifies the tag value for match. Each tag value can contain a maximum of 255 Unicode characters.

Response Parameters

Table 6-26 Response parameters

Parameter	Type	Description
resources	Array	Lists the load balancers. For details, see Table 6-27 .
total_count	Integer	Specifies the total number of queried records.

Table 6-27 resource parameter description

Parameter	Type	Description
resource_id	String	Specifies the resource ID.
resource_detail	String	Specifies the resource details. The value is a resource object, used for extension. The value is left blank by default.
tags	Array	Lists the tags. If there is no tag, an empty array is used by default. For details, see Table 6-28 .
resource_name	String	Specifies the resource name. This parameter is an empty string by default if there is no resource name.
super_resource_id	String	Specifies the parent resource ID.

Table 6-28 tags parameter description

Parameter	Type	Description
key	String	Specifies the tag key. It contains a maximum of 128 Unicode characters and cannot be left blank. (This parameter is not verified in the search process.)
value	String	Specifies the tag value. Each tag value can contain a maximum of 255 Unicode characters.

Example Request

- Example request 1 (when **action** is set to **filter**)

POST https://{{Endpoint}}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/resource_instances/action

```
{
  "offset": "100",
  "limit": "100",
  "action": "filter",
  "matches": [
    {
      "key": "resource_name",
      "value": "resource1"
    }
  ],
  "tags": [
    {
      "key": "key1",
      "values": [
        "value1",
        "value2"
      ]
    }
  ]
}
```

- Example request 2 (when **action** is set to **count**)

POST https://{{Endpoint}}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/resource_instances/action

```
{
  "action": "count",
  "tags": [
    {
      "key": "key1",
      "values": [
        "value1",
        "value2"
      ]
    },
    {
      "key": "key2",
      "values": [
        "value1",
        "value2"
      ]
    }
  ],
  "matches": [
    {
```

```

    "key": "resource_name",
    "value": "resource1"
  }
]
}

```

Example Response

- Example response 1

```

{
  "resources": [
    {
      "resource_detail": "",
      "resource_id": "154d135b-3a89-4e89-8023-06efb9acdc05",
      "resource_name": "resouece1",
      "tags": [
        {
          "key": "key1",
          "value": "value1"
        },
        {
          "key": "key2",
          "value": "value1"
        }
      ]
    }
  ]
},
"total_count": 1000
}

```

- Example response 2

```

{
  "total_count": 1000
}

```

Status Code

For details, see [Status Codes](#).

6.1.7 Deleting a Tag from a Load Balancer

Function

This API is used to delete a tag with a specific key from a load balancer.

Constraints

None

URI

DELETE /v2.0/{project_id}/loadbalancers/{loadbalancer_id}/tags/{key}

Table 6-29 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the ID of the project where the tag is used.

Parameter	Mandatory	Type	Description
loadbalancer_id	Yes	String	Specifies the ID of the load balancer from which a tag is to be deleted.

Request Parameters

Table 6-30 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token

Response Parameters

None

Example Request

- Example request
DELETE https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/loadbalancers/7add33ad-11dc-4ab9-a50f-419703f13163/tags/key1

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

6.1.8 Adding a Tag to a Listener

Function

This API is used to add a tag to a specific listener.

Constraints

- A maximum of 20 tags can be added to a load balancer.
- Note the following when you add tags:
 - If there are duplicate keys in the request body, an error is reported.
 - If there are no duplicate keys in the request body but the key in the request body exists in the database, the key in the database is overwritten.

URI

POST /v2.0/{project_id}/listeners/{listener_id}/tags

Table 6-31 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the ID of the project where the tag is used.
listener_id	Yes	String	Specifies the ID of the listener to which a tag is to be added.

Request Parameters

Table 6-32 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token

Table 6-33 Parameter description

Parameter	Mandatory	Type	Description
tag	Yes	Object	Specifies the tag. For details, see Table 6-34 .

Table 6-34 tag parameter description

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. <ul style="list-style-type: none"> Cannot be left blank. Can contain a maximum of 128 characters. The tag key of a listener must be unique.
value	Yes	String	Specifies the tag value. <ul style="list-style-type: none"> Can contain a maximum of 255 characters.

Response Parameters

None

Example Request

- Example request
POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/
7add33ad-11dc-4ab9-a50f-419703f13163/tags

```
{
  "tag": {
    "key": "key1",
    "value": "value1"
  }
}
```

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

6.1.9 Batch Adding Tags to a Listener

Function

This API is used to batch add tags to a listener.

Constraints

- A maximum of 20 tags can be added to a listener.
- This API is idempotent.
- Note the following when you add tags:
 - If there are duplicate keys in the request body, an error is reported.
 - If there are no duplicate keys in the request body but the key in the request body exists in the database, the key in the database is overwritten.
 - The value of **action** must be **create**.

URI

POST /v2.0/{project_id}/listeners/{listener_id}/tags/action

Table 6-35 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the ID of the project where the tag is used.
listener_id	Yes	String	Specifies the ID of the listener to which tags are to be added.

Request Parameters

Table 6-36 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token

Table 6-37 Parameter description

Parameter	Mandatory	Type	Description
tags	Yes	Array	Lists the tags. For details, see Table 6-38 .
action	Yes	String	Specifies the operation identifier. The value can be one of the following: <ul style="list-style-type: none">• create: adds tags to the listener.

Table 6-38 resource_tag parameter description

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. <ul style="list-style-type: none">• Cannot be left blank.• Can contain a maximum of 128 characters.• The tag key of a listener must be unique.
value	Yes	String	Specifies the tag value. <ul style="list-style-type: none">• Can contain a maximum of 255 characters.

Response Parameters

None

Example Request

- Example request
POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/
7add33ad-11dc-4ab9-a50f-419703f13163/tags/action

```
{
  "action": "create",
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key2",
      "value": "value2"
    }
  ]
}
```

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

6.1.10 Batch Deleting Tags from a Listener

Function

This API is used to batch delete tags from a listener.

Constraints

- A maximum of 20 tags can be added to a listener.
- This API is idempotent.
- Note the following when you delete tags:
 - If the tag to be deleted does not exist, the deletion is considered successful by default.
 - The value range of the tag character set is not verified.
 - The tag structure body cannot be missing, and the key cannot be left blank or set to an empty string.
 - The value of **action** must be **delete**.

URI

POST /v2.0/{project_id}/listeners/{listener_id}/tags/action

Table 6-39 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the ID of the project where the tag is used.
listener_id	Yes	String	Specifies the ID of the listener from which a tag is to be deleted.

Request Parameters

Table 6-40 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	Specifies the user token.

Table 6-41 Request parameters

Parameter	Mandatory	Type	Description
tags	Yes	Array	Specifies the tags. For details, see Table 6-42 .
action	Yes	String	Specifies the operation identifier. The value can be: <ul style="list-style-type: none">• delete: deletes tags from the load balancer.

Table 6-42 resource_tag parameter description

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag name. The tag: <ul style="list-style-type: none">• Cannot be left blank.• Can contain a maximum of 128 characters.• Cannot have the same key with other tags added to the same load balancer.

Parameter	Mandatory	Type	Description
value	Yes	String	Specifies the tag value. The value: <ul style="list-style-type: none">Can contain a maximum of 255 characters.

Response Parameters

None

Example Request

- Example request
POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/7add33ad-11dc-4ab9-a50f-419703f13163/tags/action

```
{
  "action": "delete",
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key2",
      "value": "value2"
    }
  ]
}
```

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

6.1.11 Querying All Tags of a Listener

Function

This API is used to query all tags of one listener.

Constraints

None

URI

GET /v2.0/{project_id}/listeners/{listener_id}/tags

Table 6-43 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the ID of the project where the tag is used.
listener_id	Yes	String	Specifies the ID of the listener whose tags are to be queried.

Request Parameters

Table 6-44 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token

Response Parameters

Table 6-45 Response parameters

Parameter	Type	Description
tags	Array	Lists the tags. For details, see Table 6-46 .

Table 6-46 tags parameter description

Parameter	Type	Description
key	String	Specifies the tag key. <ul style="list-style-type: none">• Cannot be left blank.• Can contain a maximum of 128 characters.• The tag key of a listener must be unique.
value	String	Specifies the tag value. <ul style="list-style-type: none">• Can contain a maximum of 255 characters.

Example Request

- Example request
GET https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/7add33ad-11dc-4ab9-a50f-419703f13163/tags

Example Response

- Example response

```
{
  "tags": [
    {
      "key": "key1",
      "value": "value1"
    },
    {
      "key": "key2",
      "value": "value2"
    }
  ]
}
```

Status Code

For details, see [Status Codes](#).

6.1.12 Querying the Tags of All Listeners

Function

This API is used to query the tags of all listeners.

Constraints

None

URI

GET /v2.0/{project_id}/listeners/tags

Table 6-47 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the ID of the project where the tag is used.

Request Parameters

Table 6-48 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token

Response Parameters

Table 6-49 Response parameters

Parameter	Type	Description
tags	Array	<p>Lists the tags, which are aggregated by the tag key. For details, see Table 6-50.</p> <p>For example, if you have two listeners, the tag key of both listeners is "test", the tag value of listener A is "value1", and the tag value of listener B is "value2", two tags are queried, the key of both tags is "test", and the tag values are ["value1","value2"].</p>

Table 6-50 tags parameter description

Parameter	Type	Description
key	String	<p>Specifies the tag key.</p> <ul style="list-style-type: none">• Cannot be left blank.• Can contain a maximum of 128 characters.• The tag key of a listener must be unique.
values	Array	<p>Lists the tag values.</p> <ul style="list-style-type: none">• Can contain a maximum of 255 characters.

Example Request

- Example request
GET https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/tags

Example Response

- Example response

```
{
  "tags": [
    {
      "key": "key1",
      "values": [
        "value1",
        "value2"
      ]
    },
    {
      "key": "key2",
      "values": [
        "value1",
        "value2"
      ]
    }
  ]
}
```

Status Code

For details, see [Status Codes](#).

6.1.13 Querying Listeners by Tag

Function

This API is used to query listeners by tag.

Constraints

None

URI

POST /v2.0/{project_id}/listeners/resource_instances/action

Table 6-51 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the ID of the project where the tag is used.

Request Parameters

Table 6-52 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token

Table 6-53 Parameter description

Parameter	Mandatory	Type	Description
tags	No	Array	A maximum of 20 keys can be queried at a time, and each key can contain a maximum of 20 values. The structure body must be included. The tag key cannot be left blank or be an empty string. Each tag key and each tag value of the same tag key must be unique. For details, see Table 6-54 .
limit	No	Integer	Sets the page size. This parameter is available when action is set to filter . Both the default value and maximum value are 1000 , and the minimum value is 1 . The value cannot be a negative integer.
offset	No	Integer	Specifies the index position. The query starts from the next listener indexed by this parameter. This parameter is not required when you query listeners on the first page. The value in the response returned for querying the listeners on the previous page will be included in this parameter for querying the listeners on subsequent pages. This parameter is not available when action is set to count . If action is set to filter , the value must be a positive integer, and the default value is 0 .
action	Yes	String	Identifies the operation. The value can be filter or count . <ul style="list-style-type: none">• filter: indicates pagination query.• count: indicates that all listeners meeting the search criteria will be returned.
matches	No	Array	Specifies the search criteria. The tag key is the parameter to match, for example, resource_name . value indicates the value of the match content. The key is a fixed dictionary value. Determine whether fuzzy match is required based on different parameters. For example, if the key is resource_name , fuzzy search is used by default. If value is an empty string, exact match is used. If the key is resource_id , exact match is used. For details, see Table 6-55 .

Table 6-54 tags parameter description

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. It contains a maximum of 128 Unicode characters and cannot be left blank. (This parameter is not verified in the search process.)
values	Yes	Array	Lists the tag values. Each tag value can contain a maximum of 255 Unicode characters. The values are in the OR relationship.

Table 6-55 matches parameter description

Parameter	Mandatory	Type	Description
key	Yes	String	Specifies the tag key. The value can be one of the following: <ul style="list-style-type: none">• resource_name: indicates the resource name.• resource_id: indicates the resource ID.
value	Yes	String	Specifies the tag value. Each tag value can contain a maximum of 255 Unicode characters.

Response Parameters

Table 6-56 Response parameters

Parameter	Type	Description
resources	Array	Lists the listeners. For details, see Table 6-57 .
total_count	Integer	Specifies the total number of queried records.

Table 6-57 resource parameter description

Parameter	Type	Description
resource_id	String	Specifies the resource ID.

Parameter	Type	Description
resource_detail	String	Specifies the resource details. The value is a resource object, used for extension. The value is left blank by default.
tags	Array	Lists the tags. If there is no tag, an empty array is used by default. For details, see Table 6-58 .
resource_name	String	Specifies the resource name. This parameter is an empty string by default if there is no resource name.
super_resource_id	String	Specifies the parent resource ID.

Table 6-58 tags parameter description

Parameter	Type	Description
key	String	Specifies the tag key. It contains a maximum of 128 Unicode characters and cannot be left blank. (This parameter is not verified in the search process.)
value	String	Specifies the tag value. Each tag value can contain a maximum of 255 Unicode characters.

Example Request

- Example request 1 (when **action** is set to **filter**)

POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/resource_instances/action

```
{
  "offset": "100",
  "limit": "100",
  "action": "filter",
  "matches": [
    {
      "key": "resource_name",
      "value": "resource1"
    }
  ],
  "tags": [
    {
      "key": "key1",
      "values": [
        "value1",
        "value2"
      ]
    }
  ]
}
```

- Example request 2 (when **action** is set to **count**)

POST https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/resource_instances/action

```
{
  "action": "count",
  "tags": [
    {
      "key": "key1",
      "values": [
        "value1",
        "value2"
      ]
    },
    {
      "key": "key2",
      "values": [
        "value1",
        "value2"
      ]
    }
  ],
  "matches": [
    {
      "key": "resource_name",
      "value": "resource1"
    }
  ]
}
```

Example Response

- Example response 1

```
{
  "resources": [
    {
      "resource_detail": "",
      "resource_id": "154d135b-3a89-4e89-8023-06efb9acdc05",
      "resource_name": "resouece1",
      "tags": [
        {
          "key": "key1",
          "value": "value1"
        },
        {
          "key": "key2",
          "value": "value1"
        }
      ]
    }
  ]
},
"total_count": 1000
}
```

- Example response 2

```
{
  "total_count": 1000
}
```

Status Code

For details, see [Status Codes](#).

6.1.14 Deleting a Tag from a Listener

Function

This API is used to delete a tag with a specific key from a listener.

Constraints

None

URI

DELETE /v2.0/{project_id}/listeners/{listener_id}/tags/{key}

Table 6-59 Parameter description

Parameter	Mandatory	Type	Description
project_id	Yes	String	Specifies the ID of the project where the tag is used.
listener_id	Yes	String	Specifies the ID of the listener from which a tag is to be deleted.

Request Parameters

Table 6-60 Request header parameters

Parameter	Mandatory	Type	Description
X-Auth-Token	Yes	String	User token

Response Parameters

None

Example Request

- Example request
DELETE https://{Endpoint}/v2.0/6a0de1c3-7d74-4f4a-b75e-e57135bd2b97/listeners/7add33ad-11dc-4ab9-a50f-419703f13163/tags/key1

Example Response

- Example response
None

Status Code

For details, see [Status Codes](#).

6.1.15 Status Codes

Table 6-61 Normal codes

Status Code	Message	Description
200	OK	Specifies the normal response code for the GET operation. This code is returned when a response body is returned for the POST operation.
204	No Content	Specifies the normal response code for the DELETE operation. This code is returned when no response body is returned for the POST operation.

Table 6-62 Error codes

Status Code	Error Code	Description	Error Message	Measure
400	VPC.1801	The ID is incorrect.	resource id is invalid/ Getting id is invalid.	Use a correct resource ID.
400	VPC.1801	An action error occurs.	action is invalid.	Ensure that the value of action is create or delete .
400	VPC.1801	The key length is invalid.	Tag length is invalid. The key length must be in range [1,36] and value in range [0,43]	Input a valid key.
400	VPC.0007	The project ID is incorrect.	urlTenantId is not equal token TenantId.	Check the project ID.

Status Code	Error Code	Description	Error Message	Measure
401	VPC.0008	The token in the request is invalid or the request does not contain the token.	Invalid token in the header./ Authorization information is wrong.	Check whether the token is valid.
400	VPC.1801	The value length is invalid.	Tag length is invalid. The key length must be in range [1,36] and value in range [0,43]	Input a valid value.
400	VPC.1801	The key or value contains invalid characters.	InvalidInput/Tag value xxx is invalid.	Check the validity of the key or value.
400	VPC.1801	The key or value is left blank.	Tag xxx can not be null.	Check whether the key or value is left blank.
400	VPC.1801	The tag is null.	Tag can not be null.	Check whether the tag is null.
400	VPC.1801	A resource type error occurs.	Resource xxx is invalid.	Ensure that the value of resource_type is loadbalancers or listeners .
400	VPC.1801	The total number of tags added at a time exceeds 10.	number of tags exceeds max num of 10.	Reduce the number of tags.
400	VPC.1814	The total number of existing tags and newly added tags exceeds 10.	Invalid input for operation: resource_id: XXXX, number of tags exceed max num of 10.	Reduce the number of tags.

Status Code	Error Code	Description	Error Message	Measure
400	VPC.1814	The key values of newly added tags are duplicate.	Invalid input for operation: tags key is duplicated.	Change the tag values.
400	VPC.1814	The resource ID does not exist.	Resource XXX XXX could not be found.	Check whether the resource is available.
400	VPC.1814	The specified key to be deleted does not exist, or the key is an empty string.	The resource could not be found.	Enter a correct key and send the request again.
400	VPC.1814	More than 10 tags are added to a specified resource.	Invalid input for operation:resource_id:xxx, number of tags exceeds max num of 10.	Each resource supports up to 10 tags.
400	VPC.1801	Tags are duplicate.	Tag key is repeated.	Delete duplicate tags and resend the request.
500	-	The request format is incorrect.	Internal Server Error.	Use the correct request body format.

7 Permissions and Supported Actions

7.1 Supported Actions (V2)

7.1.1 Load Balancer

Permission	API	Action	IAM Project	Enterprise Project
Creates a load balancer	POST /v2/{project_id}/elb/loadbalancers	elb:loadbalancers:create	√	√
Queries a load balancer	GET /v2/{project_id}/elb/loadbalancers/{loadbalancer_id}	elb:loadbalancers:get	√	√
Queries the status tree of a load balancer	GET /v2/{project_id}/elb/loadbalancers/{loadbalancer_id}/statuses	elb:loadbalancers:get	√	√
Queries load balancers	GET /v2/{project_id}/elb/loadbalancers	elb:loadbalancers:list	√	√

Permission	API	Action	IAM Project	Enterprise Project
Updates a load balancer	PUT /v2/{project_id}/elb/loadbalancers/{loadbalancer_id}	elb:loadbalancers:put	√	√
Deletes a load balancer	DELETE /v2/{project_id}/elb/loadbalancers/{loadbalancer_id}	elb:loadbalancers:delete	√	√

7.1.2 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	√	√

7.1.3 Backend Server Group

Permission	API	Action	IAM Project	Enterprise Project
Adds a backend server group	POST /v2/{project_id}/elb/pools	elb:pools:create	√	√
Queries a backend server group	GET /v2/{project_id}/elb/pools/{pool_id}	elb:pools:get	√	√
Queries backend server groups	GET /v2/{project_id}/elb/pools	elb:pools:list	√	√
Modifies a backend server group	PUT /v2/{project_id}/elb/pools/{pool_id}	elb:pools:put	√	√
Deletes a backend server group	DELETE /v2/{project_id}/elb/pools/{pool_id}	elb:pools:delete	√	√

7.1.4 Backend Server

Permission	API	Action	IAM Project	Enterprise Project
Adds a backend server	POST /v2/{project_id}/elb/pools/{pool_id}/members	elb:members:create	√	√

Permission	API	Action	IAM Project	Enterprise Project
Queries a backend server	GET /v2/{project_id}/elb/pools/{pool_id}/members/{member_id}	elb:members:get	√	√
Queries backend servers	GET /v2/{project_id}/elb/pools/{pool_id}/members	elb:members:list	√	√
Modifies a backend server	PUT /v2/{project_id}/elb/pools/{pool_id}/members/{member_id}	elb:members:put	√	√
Removes a backend server	DELETE /v2/{project_id}/elb/pools/{pool_id}/members/{member_id}	elb:members:delete	√	√

7.1.5 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	√	√

Permission	API	Action	IAM Project	Enterprise Project
Deletes a health check	DELETE /v2/{project_id}/elb/healthmonitors/{healthmonitor_id}	elb:healthmonitors:delete	√	√

7.1.6 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	√	√

7.1.7 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	√	√
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	√	√

7.1.8 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	√	√

Permission	API	Action	IAM Project	Enterprise Project
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	√	√

7.1.9 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	√	√

7.1.10 Quota

Permission	API	Action	IAM Project	Enterprise Project
Queries default resource quotas	GET /v2/{project_id}/elb/quotas/defaults	elb:quotas:list	√	x
Queries current resource quotas	GET /v2/{project_id}/elb/quotas	elb:quotas:list	√	x

7.1.11 Tag

Permission	API	Action
Queries all tags of a load balancer.	GET /v2.0/{project_id}/loadbalancers/{loadbalancer_id}/tags	elb:loadbalancerTags:get
Adds or deletes load balancer tags in batches.	POST /v2.0/{project_id}/loadbalancers/{loadbalancer_id}/tags/action	elb:loadbalancerTags:create
Queries tags of all load balancers in a specific project.	GET /v2.0/{project_id}/loadbalancers/tags	elb:loadbalancerTags:get
Queries load balancers by tag.	POST /v2.0/{project_id}/loadbalancers/resource_instances/action	elb:loadbalancerTags:get
Adds a tag to a specific load balancer.	POST /v2.0/{project_id}/loadbalancers/{loadbalancer_id}/tags	elb:loadbalancerTags:create
Deletes a tag with a specific key from a load balancer.	DELETE /v2.0/{project_id}/loadbalancers/{loadbalancer_id}/tags/{key}	elb:loadbalancerTags:delete

Permission	API	Action
Queries all tags of a listener.	GET /v2.0/{project_id}/listeners/{listener_id}/tags	elb:listenerTags:get
Adds or deletes listener tags in batches.	POST /v2.0/{project_id}/listeners/{listener_id}/tags/action	elb:listenerTags:create
Queries the tags of all listeners.	GET /v2.0/{project_id}/listeners/tags	elb:listenerTags:get
Queries listeners by tag.	POST /v2.0/{project_id}/listeners/resource_instances/action	elb:listenerTags:get
Adds a tag to a specific listener.	POST /v2.0/{project_id}/listeners/{listener_id}/tags	elb:listenerTags:create
Deletes a tag with a specific key from a listener.	DELETE /v2.0/{project_id}/listeners/{listener_id}/tags/{key}	elb:listenerTags:delete

7.1.12 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.

7.2 Supported Actions (V3)

7.2.1 Load Balancer

Permission	API	Action	IAM Project	Enterprise Project
Creates a load balancer	POST /v3/{project_id}/elb/loadbalancers	elb:loadbalancers:create	√	√

Permission	API	Action	IAM Project	Enterprise Project
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	√	√

7.2.2 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	√	√

Permission	API	Action	IAM Project	Enterprise Project
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	√	√

7.2.3 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	√	√
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	√	√

7.2.4 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	√	√

7.2.5 Health Check

Permission	API	Action	IAM Project	Enterprise Project
Configures a health check	POST /v3/{project_id}/elb/healthmonitors	elb:healthmonitors:create	√	√
Queries a health check	GET /v3/{project_id}/elb/healthmonitors/{healthmonitor_id}	elb:healthmonitors:get	√	√

Permission	API	Action	IAM Project	Enterprise Project
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	√	√

7.2.6 Forwarding Policy

Permission	API	Action	IAM Project	Enterprise Project
Adds a forwarding policy	POST /v3/{project_id}/elb/l7policies	elb:l7policies:create	√	√
Queries a forwarding policy	GET /v3/{project_id}/elb/l7policies/{l7policy_id}	elb:l7policies:get	√	√
Queries forwarding policies	GET /v3/{project_id}/elb/l7policies	elb:l7policies:list	√	√
Updates a forwarding policy	PUT /v3/{project_id}/elb/l7policies/{l7policy_id}	elb:l7policies:put	√	√
Deletes a forwarding policy	DELETE /v3/{project_id}/elb/l7policies/{l7policy_id}	elb:l7policies:delete	√	√

7.2.7 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	√	√

7.2.8 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	√	√

Permission	API	Action	IAM Project	Enterprise Project
Queries IP addresses 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	√	√

7.2.9 Certificate

Permission	API	Action	IAM Project	Enterprise Project
Creates a certificate	POST /v3/{project_id}/elb/certificates	elb:certificates:create	√	√

Permission	API	Action	IAM Project	Enterprise Project
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	√	√

7.2.10 Security Policy

Permission	API	Action	IAM Project	Enterprise Project
Creates a custom security policy	POST /v3/{project_id}/elb/security-policies	elb:security-policies:create	√	√
Queries a custom security policy	GET /v3/{project_id}/elb/security-policies/{certificate_id}	elb:security-policies:get	√	√

Permission	API	Action	IAM Project	Enterprise Project
Queries custom security policies	GET /v3/{project_id}/elb/security-policies	elb:security-policies:list	√	√
Updates a custom security policy	PUT /v3/{project_id}/elb/security-policies/{certificate_id}	elb:security-policies:put	√	√
Deletes a custom security policy	DELETE /v3/{project_id}/elb/security-policies/{certificate_id}	elb:security-policies:delete	√	√
Queries system security policies	GET /v3/{project_id}/elb/system-security-policies	elb:security-policies:list	√	√

7.2.11 Quota

Permission	API	Action	IAM Project	Enterprise Project
Queries current resource quotas	GET /v3/{project_id}/elb/quotas	elb:quotas:list	√	√

Permission	API	Action	IAM Project	Enterprise Project
Queries quota usage	GET /v3/{project_id}/elb/quotas/details	elb:quotas:list	√	√

7.2.12 API Version

Permission	API	Action	IAM Project	Enterprise Project
Queries the API version	GET /versions	elb:quotas:list	√	x

7.2.13 Availability Zone

Permission	API	Action	IAM Project	Enterprise Project
Queries AZs	GET /v3/{project_id}/elb/availability-zones	elb:availability-zones:list	√	√

7.2.14 Load Balancer Flavor

Permission	API	Action	IAM Project	Enterprise Project
Queries default resource quotas	GET /v3/{project_id}/elb/flavors	elb:flavors:list	√	x

Permission	API	Action	IAM Project	Enterprise Project
Queries current resource quotas	GET /v3/{project_id}/elb/flavors/{flavor_id}	elb:flavors:get	√	x

7.2.15 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.

A Appendix

A.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.8934	The number of available IP addresses in the subnet on the downstream plane is insufficient.	The elb_virsubnet_ids %s is expected to use %s ipv4 addresses but only %s ipv4 addresses are available, Please reselect.	Check your request based on the error message.
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.

Status Code	Error Codes	Error Message	Description	Solution
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.
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.

Status Code	Error Codes	Error Message	Description	Solution
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.
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.

Status Code	Error Codes	Error Message	Description	Solution
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.
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.

Status Code	Error Codes	Error Message	Description	Solution
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.

A.2 Status Codes

Table A-1 Normal status codes

Status Code	Message	Description
200	OK	Normal response to GET and PUT requests.
201	Created	Normal response to POST requests.
204	No Content	Normal response to DELETE requests.

Table A-2 Error codes

Status Code	Message	Description
400	Bad Request	Invalid request URI.
		Too long request header.
		Invalid request body.
		Unreleased fields in the request body.
401	Unauthorized	Authentication information unavailable in the request header.
		Expired authentication information in the request header.
403	Forbidden	No permissions to access APIs.

Status Code	Message	Description
404	Not Found	No available request URI.
		No available requested resources.
405	Method Not Allowed	Method specified in the request not allowed.
406	Not Acceptable	Responses from the server failed to be received by the client.
407	Proxy Authentication Required	Proxy authentication required before the request can be processed.
408	Request Timeout	Request timed out.
409	Conflict	Failed to complete the request due to conflicts.
		The resource being accessed by another request.
500	Internal IaaS OpenStack network error.	Service internal error.
		Server exception.
501	Not Implemented	Failed to complete the request because the server does not support the requested function.
502	Bad Gateway	Failed to complete the request because the server receives an invalid response from the upstream server.
503	Service Unavailable	Failed to complete the request because the system is temporarily abnormal.
504	Gateway Timeout	Gateway timed out.

A.3 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 the project ID by calling the IAM API used to query project information based on the 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 **My Credentials** page, view the project ID (value in the **Project ID** column).

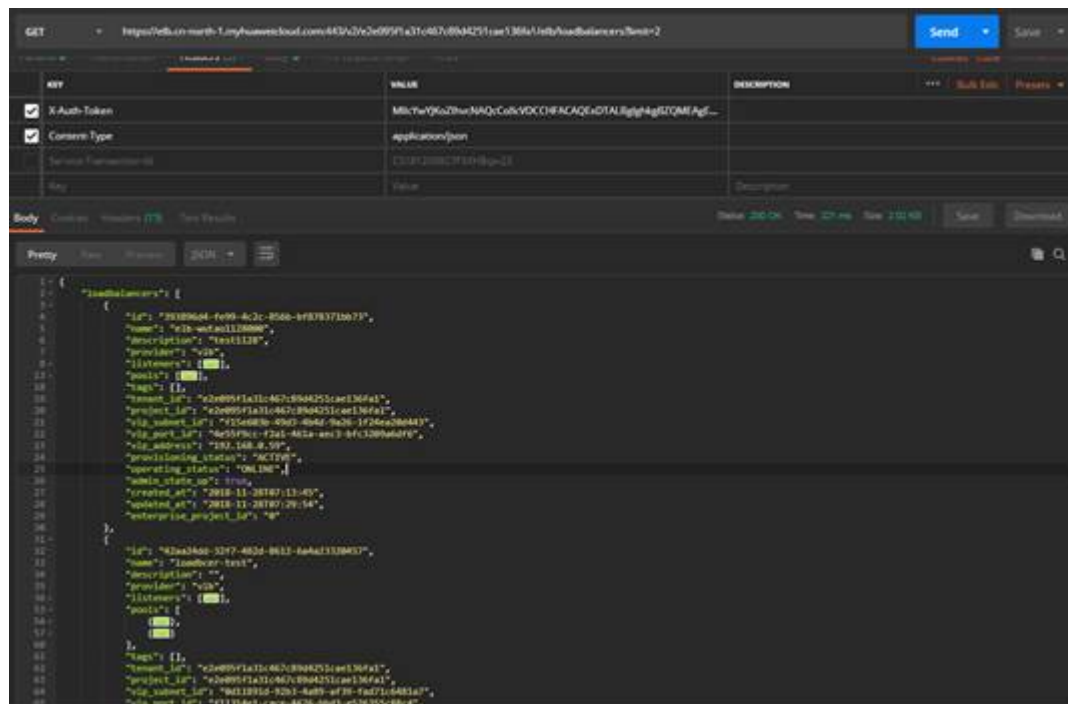
A.4 Querying Data in Pages

Procedure

The following uses the API (GET `/v2/{project_id}/elb/loadbalancers`) as an example to describe how to query all five load balancers and associated resources by page. Two load balancers are displayed on each page.

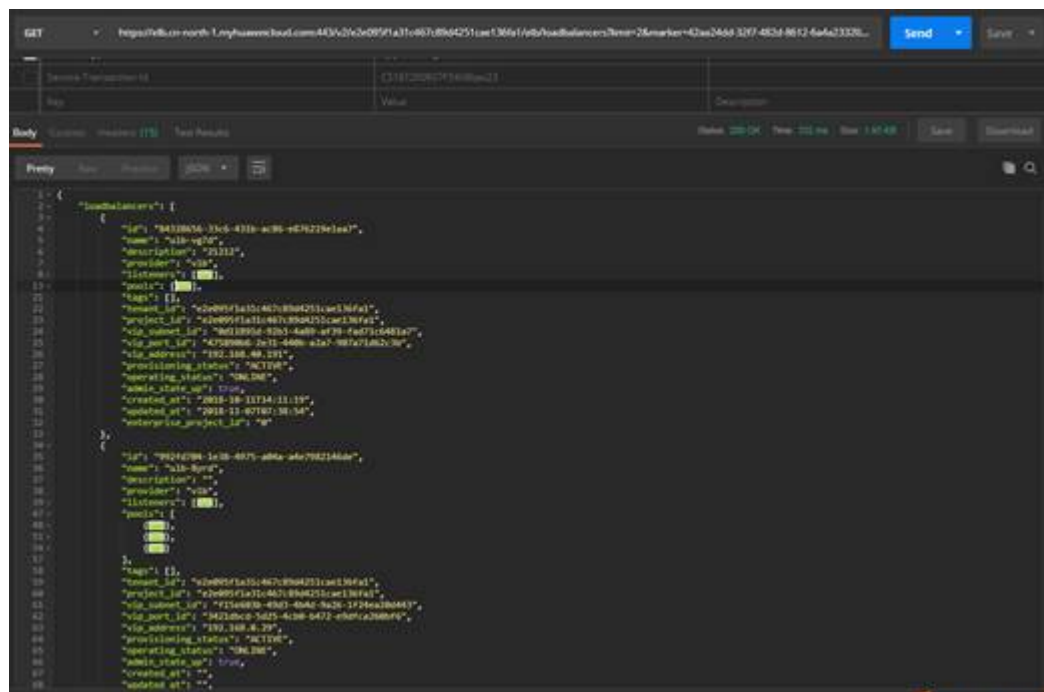
- Step 1** Set the header information in Postman, put the obtained token in the header, set **limit** to **2**, and query load balancers on the first page.

Figure A-1 Page 1



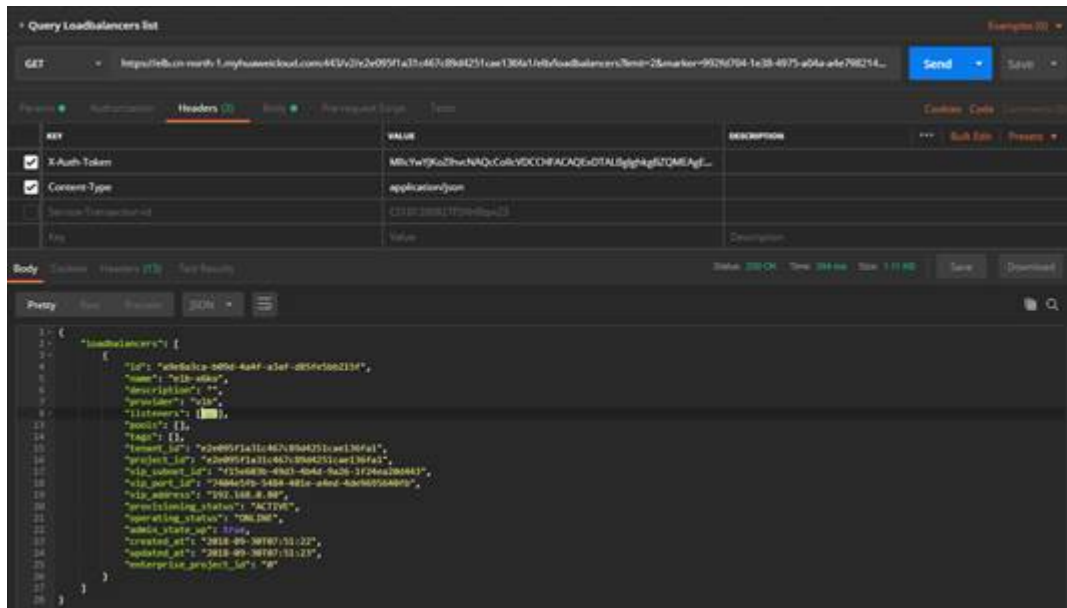
Step 2 Check whether the number of load balancers returned is less than the value of **limit**. If yes, the last page is displayed. If no, the next page will be queried. In this example, to query the next page, set **marker** to the ID of the last load balancer on the previous page, set **limit** to 2.

Figure A-2 Page 2



Step 3 Use the same method to query the third page.

Figure A-3 Page 3



Step 4 If the number of load balancers on the previous page is less than the value of **limit**, the pagination query is complete.

----End

Sample Code

The request body in [Step 2](#) is as follows:

```
GET https://elb.region-1.mycloud.com:443/v2/e2e095f1a31c467c89d4251cae136fa1/elb/loadbalancers?limit=2&marker=42aa24d4-32f7-482d-8612-6a4a23320457
```

The response body in [Step 2](#) is as follows:

```
{
  "loadbalancers": [
    {
      "id": "84328656-33c6-431b-ac86-e876219e1aa7",
      "name": "ulb-vg7d",
      "description": "21212",
      "provider": "vlb",
      "listeners": [
        {
          "id": "8bad548d-740f-44db-bc91-c10271a0c750"
        }
      ],
      "pools": [
        {
          "id": "bc632a6f-b691-4f07-8523-2c4c7009d28e"
        },
        {
          "id": "599a4c5b-c00c-4491-9860-f322200c72a3"
        }
      ],
      "tags": [],
      "tenant_id": "e2e095f1a31c467c89d4251cae136fa1",
      "project_id": "e2e095f1a31c467c89d4251cae136fa1",
      "vip_subnet_id": "0d11891d-92b3-4a89-af39-fad71c6481a7",
      "vip_port_id": "475890b6-2e31-440b-a2a7-907a71d62c3b",
      "vip_address": "192.168.40.191",
      "provisioning_status": "ACTIVE",
    }
  ]
}
```

```
"operating_status": "ONLINE",
"admin_state_up": true,
"created_at": "2018-10-11T14:11:19",
"updated_at": "2018-11-07T07:38:54",
"enterprise_project_id": "0"
},
{
  "id": "992fd704-1e38-4975-a04a-a4e7982146de",
  "name": "ulb-8yrd",
  "description": "",
  "provider": "vlb",
  "listeners": [
    {
      "id": "ad49e548-1466-43de-9247-10f56e1f2e0e"
    },
    {
      "id": "bdba3fa8-574f-4c6e-a808-8f21b54b9b1a"
    }
  ],
  "pools": [
    {
      "id": "10977afc-dfb9-40fa-afa5-2177aa8f8529"
    },
    {
      "id": "18238c04-5b33-4e5c-8069-8728dece4b54"
    },
    {
      "id": "5389884f-e884-4c98-9e5f-1b8da5cb3fd0"
    }
  ],
  "tags": [],
  "tenant_id": "e2e095f1a31c467c89d4251cae136fa1",
  "project_id": "e2e095f1a31c467c89d4251cae136fa1",
  "vip_subnet_id": "f15e603b-49d3-4b4d-9a26-1f24ea20d443",
  "vip_port_id": "3421dbcd-5d25-4cb0-b472-e9dfca260bf6",
  "vip_address": "192.168.0.29",
  "provisioning_status": "ACTIVE",
  "operating_status": "ONLINE",
  "admin_state_up": true,
  "created_at": "",
  "updated_at": "",
  "enterprise_project_id": "0"
}
]
```

B Change History

Released On	Description
2024-04-19	This issue is the first official release.