

Elastic Load Balance

API Reference

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Contents

| | |
|--|-----------|
| 1 Before You Start..... | 1 |
| 1.1 Overview..... | 1 |
| 1.2 API Calling..... | 1 |
| 1.3 Endpoints..... | 1 |
| 1.4 Notes and Constraints..... | 1 |
| 1.5 Concepts..... | 2 |
| 2 API Overview..... | 3 |
| 3 Calling APIs..... | 5 |
| 3.1 Making an API Request..... | 5 |
| 3.2 Authentication..... | 9 |
| 3.3 Response..... | 13 |
| 4 APIs (V3)..... | 15 |
| 4.1 API Version..... | 15 |
| 4.1.1 Querying API Versions..... | 15 |
| 4.2 Quota..... | 17 |
| 4.2.1 Querying Quotas..... | 17 |
| 4.2.2 Querying Quota Usage..... | 21 |
| 4.3 AZ..... | 24 |
| 4.3.1 Querying AZs..... | 24 |
| 4.4 Load Balancer..... | 27 |
| 4.4.1 Creating a Load Balancer..... | 27 |
| 4.4.2 Querying Load Balancers..... | 51 |
| 4.4.3 Viewing Details of a Load Balancer..... | 69 |
| 4.4.4 Updating a Load Balancer..... | 79 |
| 4.4.5 Deleting a Load Balancer..... | 96 |
| 4.4.6 Querying the Status Tree of a Load Balancer..... | 98 |
| 4.5 Certificate..... | 105 |
| 4.5.1 Creating a Certificate..... | 105 |
| 4.5.2 Querying Certificates..... | 112 |
| 4.5.3 Viewing Details of a Certificate..... | 119 |
| 4.5.4 Updating a Certificate..... | 123 |
| 4.5.5 Deleting a Certificate..... | 129 |

| | |
|---|-----|
| 4.6 Security Policy..... | 130 |
| 4.6.1 Creating a Custom Security Policy..... | 130 |
| 4.6.2 Querying Custom Security Policies..... | 134 |
| 4.6.3 Querying Details of a Custom Security Policy..... | 139 |
| 4.6.4 Updating a Custom Security Policy..... | 142 |
| 4.6.5 Deleting a Custom Security Policy..... | 146 |
| 4.6.6 Querying System Security Policies..... | 148 |
| 4.7 IP Address Group..... | 151 |
| 4.7.1 Creating an IP Address Group..... | 151 |
| 4.7.2 Querying IP Address Groups..... | 155 |
| 4.7.3 Viewing Details of an IP Address Group..... | 159 |
| 4.7.4 Updating an IP Address Group..... | 162 |
| 4.7.5 Deleting an IP Address Group..... | 166 |
| 4.7.6 Updating IP Addresses in an IP Address Group..... | 167 |
| 4.7.7 Deleting IP Addresses from an IP Address Group..... | 171 |
| 4.8 Listener..... | 174 |
| 4.8.1 Adding a Listener..... | 174 |
| 4.8.2 Querying Listeners..... | 197 |
| 4.8.3 Viewing Details of a Listener..... | 214 |
| 4.8.4 Updating a Listener..... | 223 |
| 4.8.5 Deleting a Listener..... | 243 |
| 4.9 Backend Server Group..... | 244 |
| 4.9.1 Creating a Backend Server Group..... | 244 |
| 4.9.2 Querying Backend Server Groups..... | 258 |
| 4.9.3 Viewing Details of a Backend Server Group..... | 270 |
| 4.9.4 Updating a Backend Server Group..... | 276 |
| 4.9.5 Deleting a Backend Server Group..... | 287 |
| 4.10 Backend Server..... | 288 |
| 4.10.1 Adding a Backend Server..... | 289 |
| 4.10.2 Querying Backend Servers..... | 298 |
| 4.10.3 Viewing Details of a Backend Server..... | 308 |
| 4.10.4 Updating a Backend Server..... | 314 |
| 4.10.5 Removing a Backend Server..... | 321 |
| 4.11 Health Check..... | 322 |
| 4.11.1 Configuring a Health Check..... | 322 |
| 4.11.2 Querying Health Checks..... | 332 |
| 4.11.3 Viewing Details of a Health Check..... | 342 |
| 4.11.4 Updating a Health Check..... | 346 |
| 4.11.5 Deleting a Health Check..... | 356 |
| 4.12 Forwarding Policy..... | 357 |
| 4.12.1 Adding a Forwarding Policy..... | 357 |
| 4.12.2 Querying Forwarding Policies..... | 386 |

| | |
|---|------------|
| 4.12.3 Viewing Details of a Forwarding Policy..... | 401 |
| 4.12.4 Updating a Forwarding Policy..... | 409 |
| 4.12.5 Deleting a Forwarding Policy..... | 434 |
| 4.12.6 Batch Updating Forwarding Policy Priorities..... | 436 |
| 4.13 Forwarding Rule..... | 440 |
| 4.13.1 Adding a Forwarding Rule..... | 440 |
| 4.13.2 Querying Forwarding Rules..... | 454 |
| 4.13.3 Viewing Details of a Forwarding Rule..... | 464 |
| 4.13.4 Updating a Forwarding Rule..... | 469 |
| 4.13.5 Deleting a Forwarding Rule..... | 483 |
| 5 API (V2)..... | 485 |
| 5.1 Load Balancer..... | 485 |
| 5.1.1 Creating a Load Balancer..... | 485 |
| 5.1.2 Querying Load Balancers..... | 492 |
| 5.1.3 Querying Details of a Load Balancer..... | 499 |
| 5.1.4 Querying the Status Tree of a Load Balancer..... | 504 |
| 5.1.5 Updating a Load Balancer..... | 511 |
| 5.1.6 Deleting a Load Balancer..... | 517 |
| 5.2 Backend Server Group..... | 518 |
| 5.2.1 Adding a Backend Server Group..... | 518 |
| 5.2.2 Querying Backend Server Groups..... | 529 |
| 5.2.3 Querying Details of a Backend Server Group..... | 537 |
| 5.2.4 Updating a Backend Server Group..... | 543 |
| 5.2.5 Deleting a Backend Server Group..... | 552 |
| 5.3 Backend Server..... | 553 |
| 5.3.1 Adding a Backend Server..... | 553 |
| 5.3.2 Querying Backend Servers..... | 557 |
| 5.3.3 Querying Details of a Backend Server..... | 562 |
| 5.3.4 Updating a Backend Server..... | 564 |
| 5.3.5 Removing a Backend Server..... | 568 |
| 5.4 Health Check..... | 569 |
| 5.4.1 Configuring a Health Check..... | 569 |
| 5.4.2 Querying Health Checks..... | 576 |
| 5.4.3 Querying Health Check Details..... | 583 |
| 5.4.4 Updating a Health Check..... | 586 |
| 5.4.5 Deleting a Health Check..... | 592 |
| 5.5 Forwarding Policy..... | 593 |
| 5.5.1 Adding a Forwarding Policy..... | 593 |
| 5.5.2 Querying Forwarding Policies..... | 600 |
| 5.5.3 Querying Details of a Forwarding Policy..... | 607 |
| 5.5.4 Updating a Forwarding Policy..... | 609 |
| 5.5.5 Deleting a Forwarding Policy..... | 613 |

| | |
|--|------------|
| 5.6 Forwarding Rule..... | 614 |
| 5.6.1 Adding a Forwarding Rule..... | 614 |
| 5.6.2 Querying Forwarding Rules..... | 620 |
| 5.6.3 Querying Details of a Forwarding Rule..... | 625 |
| 5.6.4 Updating a Forwarding Rule..... | 628 |
| 5.6.5 Deleting a Forwarding Rule..... | 632 |
| 5.7 Whitelist..... | 633 |
| 5.7.1 Adding a Whitelist..... | 633 |
| 5.7.2 Querying Details of a Whitelist..... | 636 |
| 5.7.3 Querying Whitelists..... | 637 |
| 5.7.4 Updating a Whitelist..... | 640 |
| 5.7.5 Deleting a Whitelist..... | 643 |
| 5.8 Certificate..... | 644 |
| 5.8.1 Creating a Certificate..... | 644 |
| 5.8.2 Querying Certificates..... | 649 |
| 5.8.3 Querying Details of a Certificate..... | 657 |
| 5.8.4 Updating a Certificate..... | 660 |
| 5.8.5 Deleting a Certificate..... | 666 |
| 6 API (OpenStack API)..... | 668 |
| 6.1 Tag..... | 668 |
| 6.1.1 Adding a Tag to a Load Balancer..... | 668 |
| 6.1.2 Batch Adding Load Balancer Tags..... | 670 |
| 6.1.3 Batch Deleting Load Balancer Tags..... | 672 |
| 6.1.4 Querying All Tags of a Load Balancer..... | 674 |
| 6.1.5 Querying the Tags of All Load Balancers..... | 676 |
| 6.1.6 Querying Load Balancers by Tag..... | 677 |
| 6.1.7 Deleting a Tag from a Load Balancer..... | 682 |
| 6.1.8 Adding a Tag to a Listener..... | 683 |
| 6.1.9 Batch Adding Tags to a Listener..... | 685 |
| 6.1.10 Batch Deleting Tags from a Listener..... | 687 |
| 6.1.11 Querying All Tags of a Listener..... | 689 |
| 6.1.12 Querying the Tags of All Listeners..... | 691 |
| 6.1.13 Querying Listeners by Tag..... | 693 |
| 6.1.14 Deleting a Tag from a Listener..... | 697 |
| 6.1.15 Status Codes..... | 699 |
| 7 Permissions and Supported Actions..... | 702 |
| 7.1 Supported Actions (V2)..... | 702 |
| 7.1.1 Load Balancer..... | 702 |
| 7.1.2 Listener..... | 703 |
| 7.1.3 Backend Server Group..... | 704 |
| 7.1.4 Backend Server..... | 704 |
| 7.1.5 Health Check..... | 705 |

| | |
|---|------------|
| 7.1.6 Forwarding Policy..... | 706 |
| 7.1.7 Forwarding Rule..... | 707 |
| 7.1.8 Whitelist..... | 707 |
| 7.1.9 SSL Certificate..... | 708 |
| 7.1.10 Quota..... | 709 |
| 7.1.11 Tag..... | 709 |
| 7.1.12 Precautions for API Permissions..... | 710 |
| 7.2 Supported Actions (V3)..... | 710 |
| 7.2.1 Load Balancer..... | 710 |
| 7.2.2 Listener..... | 711 |
| 7.2.3 Backend Server Group..... | 712 |
| 7.2.4 Backend Server..... | 713 |
| 7.2.5 Health Check..... | 713 |
| 7.2.6 Forwarding Policy..... | 714 |
| 7.2.7 Forwarding Rule..... | 715 |
| 7.2.8 IP Address Group..... | 715 |
| 7.2.9 Certificate..... | 716 |
| 7.2.10 Security Policy..... | 717 |
| 7.2.11 Quota..... | 718 |
| 7.2.12 API Version..... | 719 |
| 7.2.13 Availability Zone..... | 719 |
| 7.2.14 Load Balancer Flavor..... | 719 |
| 7.2.15 Precautions for API Permissions..... | 720 |
| 8 Appendix..... | 721 |
| 8.1 Error Codes..... | 721 |
| 8.2 Status Codes..... | 735 |
| 8.3 Monitoring Metrics..... | 736 |
| 8.4 Obtaining a Project ID..... | 741 |
| 9 Change History..... | 743 |

1 Before You Start

1.1 Overview

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

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

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

1.2 API Calling

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

1.3 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.

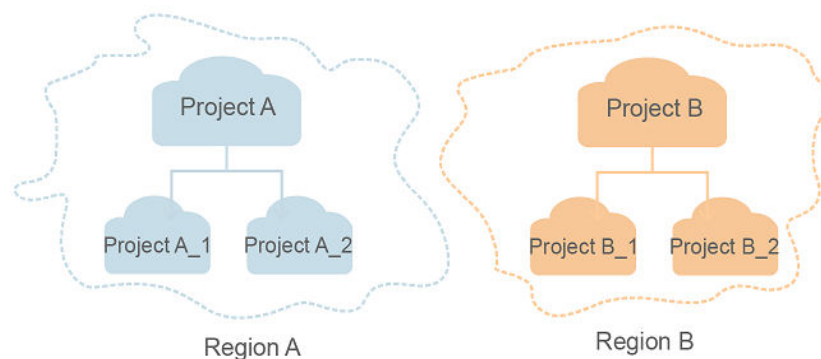
1.4 Notes and Constraints

- The number of load balancers and associated resources that you can create are determined by your quotas. To view or increase the quota, see section "What Is Quota?" in the *Elastic Load Balance User Guide*.
- For more constraints, see API description.

1.5 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:

- Token authentication: Requests are authenticated using tokens.
- 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

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

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

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.

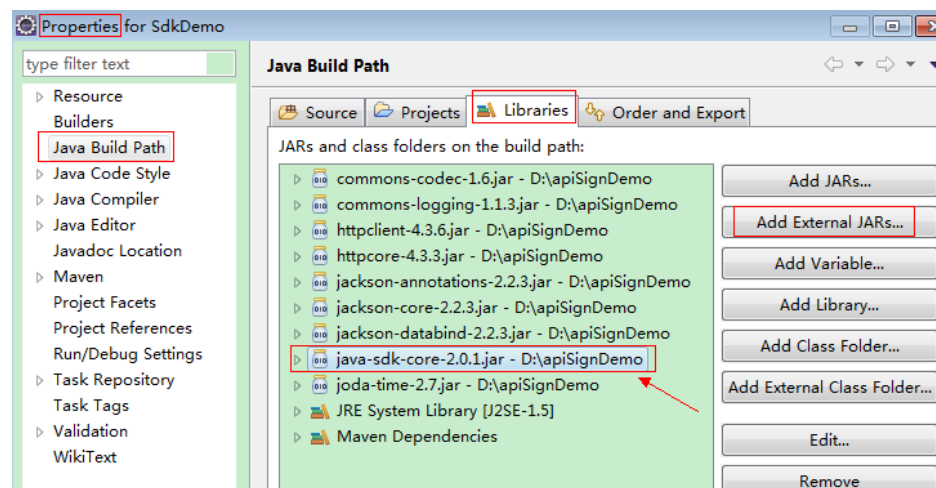
Download the demo project at <https://github.com/api-gate-way/SdkDemo>.

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

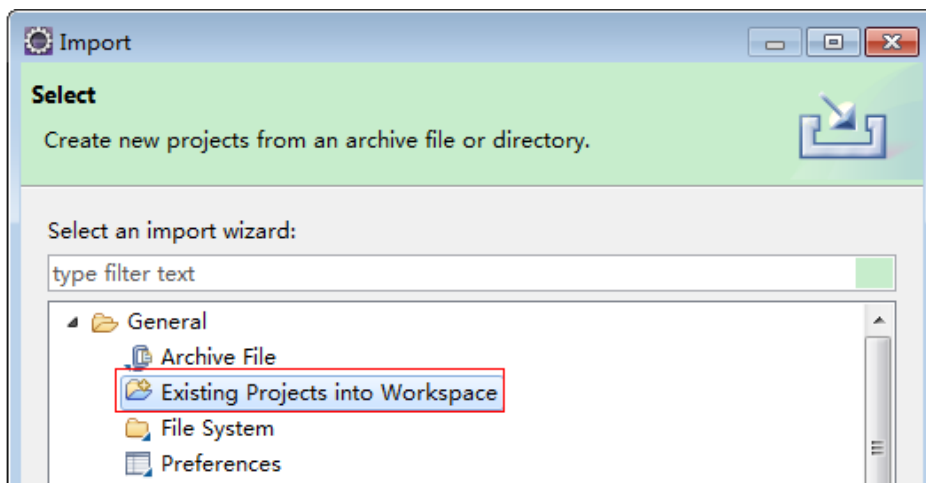


Figure 3-3 Selecting the demo project

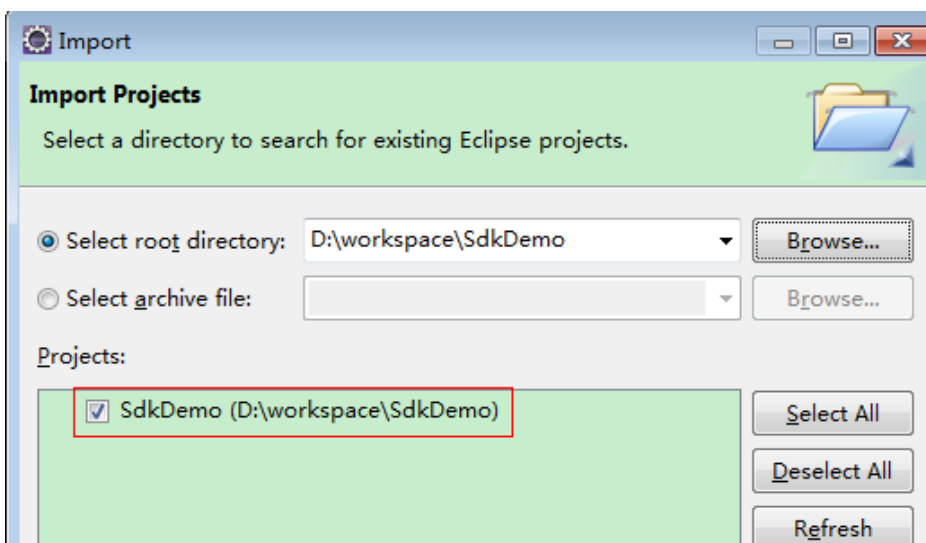
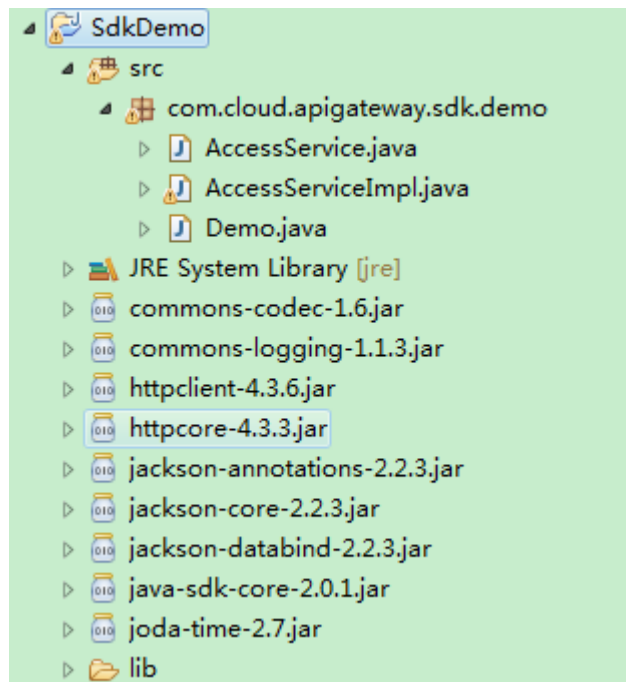


Figure 3-4 Structure of the demo project**Step 4** Sign the request.

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 UnsupportedEncodingException
```

```
{
//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 AccessServiceImple.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

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. 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 forwarding policy quota. The value can be: <ul style="list-style-type: none">• If the value is greater than or equal to 0, it indicates the current quota.• -1 indicates that the quota is not limited. |
| 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. |

| Parameter | Type | Description |
|--------------------|---------|--|
| 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 quota 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 backend servers that can be added to a backend server group. The value can be: <ul style="list-style-type: none">• If the value is greater than or equal to 0, it indicates the current quota.• -1 indicates that the quota is not limited. |
| ipgroup | Integer | Specifies the IP address group quota. <ul style="list-style-type: none">• If the value is greater than or equal to 0, it indicates the IP address group quota.• If the value is -1, the quota is not limited. |
| ipgroup_bindings | Integer | Specifies the IP address group quota. <ul style="list-style-type: none">• If the value is greater than or equal to 0, it indicates the IP address group quota.• If the value is -1, the quota is not limited. |
| ipgroup_max_length | 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. |
| security_policy | Integer | Specifies the custom security policy quota. <ul style="list-style-type: none">• If the value is greater than or equal to 0, it indicates the custom security policy quota.• If the value is -1, the quota is not limited. |

| Parameter | Type | Description |
|----------------------------|---------|--|
| listeners_per_loadbalancer | Integer | <p>Specifies the maximum number of listeners that can be associated with a load balancer. The value can be:</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 a load balancer is not limited. It is recommended that you keep listeners within the default quota.</p> |

Example Requests

Querying the quotas of resources associated with a load balancer.

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

Example Responses

Status code: 200

Successful request.

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

Status Codes

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

Error Codes

See [Error Codes](#).

4.2.2 Querying Quota Usage

Function

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

Calling Method

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

URI

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

Table 4-7 Path Parameters

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

Table 4-8 Query Parameters

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

Request Parameters

Table 4-9 Request header parameters

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

Response Parameters

Status code: 200

Table 4-10 Response body parameters

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

Table 4-11 QuotaInfo

| Parameter | Type | Description |
|-------------|---------|---|
| quota_key | String | Specifies the resource type. The value can be loadbalancer , listener , ipgroup , pool , member , members_per_pool , healthmonitor , l7policy , certificate , security_policy , condition_per_policy , listeners_per_pool , ipgroup_bindings , or ipgroup_max_length . members_per_pool indicates the maximum number of backend servers that can be added to a backend server group. |
| quota_limit | Integer | Specifies the total quota. Values: <ul style="list-style-type: none">• If the value is greater than or equal to 0, it indicates the current quota.• -1 indicates that the quota is not limited. |
| used | Integer | Specifies the used quota. |
| unit | String | Specifies the quota unit. The value can only be count . |

Example Requests

Querying the quota of a specific ELB resource type

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

Example Responses

Status code: 200

Successful request.

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

```
"quota_limit" : 50,  
"unit" : "count"  
}, {  
"quota_key" : "l7policy",  
"used" : 148,  
"quota_limit" : 2000,  
"unit" : "count"  
}, {  
"quota_key" : "healthmonitor",  
"used" : 762,  
"quota_limit" : -1,  
"unit" : "count"  
}]  
}
```

Status Codes

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

Error Codes

See [Error Codes](#).

4.3 AZ

4.3.1 Querying AZs

Function

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

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

Calling Method

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

URI

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

Table 4-12 Path Parameters

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

Table 4-13 Query Parameters

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

Request Parameters

Table 4-14 Request header parameters

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

Response Parameters

Status code: 200

Table 4-15 Response body parameters

| Parameter | Type | Description |
|--------------------|--------------------------------|---|
| request_id | String | Specifies the request ID. The value is automatically generated. |
| availability_zones | Array<Array<AvailabilityZone>> | Specifies the AZs that are available during load balancer creation. For example, in [az1,az2] and [az2,az3] sets, you can select az1 and az2 or az2 and az3, but cannot select az1 and az3. |

Table 4-16 AvailabilityZone

| Parameter | Type | Description |
|-----------|--------|--|
| code | String | Specifies the AZ code. |
| state | String | Specifies the AZ status. The value can only be ACTIVE . |

| Parameter | Type | Description |
|---------------------|------------------|---|
| protocol | Array of strings | Specifies the type of the flavor that is not sold out. L4 indicates the flavor at Layer 4 (flavor for network load balancing). L7 indicates the flavor at Layer 7 (flavor for application load balancing). |
| public_border_group | String | Specifies the AZ group, for example, center . |
| category | Integer | Specifies the AZ code. 0 indicates center . 21 indicates homezone . |

Example Requests

Querying AZs where a load balancer works

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

Example Responses

Status code: 200

Successful request.

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

Status Codes

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

Error Codes

See [Error Codes](#).

4.4 Load Balancer

4.4.1 Creating a Load Balancer

Function

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

- Specify **vip_subnet_cidr_id** if you want to bind a private IPv4 address to the dedicated load balancer.
- Specify **publicip** and either **vpc_id** or **vip_subnet_cidr_id** if you want to bind a new IPv4 EIP to the dedicated load balancer.
- Specify **publicip_ids** and either **vpc_id** or **vip_subnet_cidr_id** if you want to bind an existing IPv4 EIP to the dedicated load balancer.
- Specify **ipv6_vip_virsubnet_id** if you want to bind a private IPv6 address to the dedicated load balancer.
- Specify both **ipv6_vip_virsubnet_id** and **ipv6_bandwidth** if you want to bind a public IPv6 address to the dedicated load balancer.
- You cannot bind an existing and unoccupied private IPv4 address, IPv6 address, or public IPv6 address to the dedicated load balancer.
- You must specify the ID of a flavor at Layer 4 for **l4_flavor_id** and the ID of a flavor at Layer 7 for **l7_flavor_id**.

Constraints

There are some constraints when you create a dedicated load balancer:

- **vpc_id**, **vip_subnet_cidr_id**, and **ipv6_vip_virsubnet_id** cannot be left blank at the same time.
- **ip_target_enable** specifies whether to enable **IP as a Backend**. If you enable this function for a dedicated load balancer, you can associate servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using server IP addresses.
- **admin_state_up** must be set to **true**.

- **provider** must be set to **vlb**.
- **elb_virsubnet_ids** indicates the subnets that support IPv4/IPv6 dual stack or only IPv4 subnets. If only IPv4 subnets are supported, **ipv6_vip_virsubnet_id** must be left blank.
- If you bind an EIP to the load balancer during creation, you cannot unbind it from the load balancer by calling the API after the load balancer is created. Instead, you can unbind the EIP only on the ELB console. Locate the dedicated load balancer in the load balancer list and click **More > Unbind EIP** in the **Operation** column.
- **publicip_ids** and **publicip** cannot be specified at the same time. Set either **publicip_ids** to bind an existing EIP to the load balancer, or **publicip** to bind a new EIP to the load balancer, or neither of them.
- If you want to add the load balancer to a shared bandwidth, you must specify the ID of the shared bandwidth. If you want the load balancer to use a new dedicated bandwidth, **charge_mode**, **share_type**, and **size** are required.

Calling Method

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

URI

POST /v3/{project_id}/elb/loadbalancers

Table 4-17 Path Parameters

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

Request Parameters

Table 4-18 Request header parameters

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

Table 4-19 Request body parameters

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

Table 4-20 CreateLoadBalancerOption

| Parameter | Mandatory | Type | Description |
|-------------|-----------|--------|---|
| id | No | String | Specifies the ID of a load balancer. This parameter is unsupported. Please do not use it. Minimum: 0 Maximum: 36 |
| project_id | No | String | Specifies the project ID. Minimum: 1 Maximum: 32 |
| name | No | String | Specifies the load balancer name. Minimum: 0 Maximum: 255 |
| description | No | String | Provides supplementary information about the load balancer. Minimum: 0 Maximum: 255 |

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

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

| Parameter | Mandatory | Type | Description |
|-----------------------|-----------|--------|--|
| ipv6_vip_virsubnet_id | No | String | <p>Specifies the ID of the IPv6 subnet where the load balancer resides. You can query 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"> • vpc_id, vip_subnet_cidr_id and ipv6_vip_virsubnet_id cannot be left blank at the same time. The subnet specified by vip_subnet_cidr_id and the subnet specified by ipv6_vip_virsubnet_id must be in the VPC specified by vpc_id. • IPv6 must have been enabled for the IPv6 subnet where the load balancer resides. |
| provider | No | String | <p>Specifies the provider of the load balancer. The value can only be vlb.</p> <p>Minimum: 1 Maximum: 255</p> |
| l4_flavor_id | No | String | <p>Specifies the ID of a flavor at Layer 4.</p> <p>All load balancers share underlying resources. This parameter is unsupported. Please do not use it.</p> <p>Minimum: 1 Maximum: 36</p> |
| l7_flavor_id | No | String | <p>Specifies the ID of a flavor at Layer 7.</p> <p>All load balancers share underlying resources. This parameter is unsupported. Please do not use it.</p> <p>Minimum: 1 Maximum: 36</p> |

| Parameter | Mandatory | Type | Description |
|------------------------|-----------|------------------|---|
| guaranteed | No | Boolean | <p>Specifies whether the load balancer is a dedicated load balancer.</p> <ul style="list-style-type: none">• true (default): The load balancer is a dedicated load balancer.• false: The load balancer is a shared load balancer. <p>Currently, the value can only be true. If the value is set to false, 400 Bad Request will be returned.</p> |
| vpc_id | No | String | <p>Specifies the ID of the VPC where the load balancer resides. You can query parameter id in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/vpcs).</p> <p>vpc_id, vip_subnet_cidr_id and ipv6_vip_virsubnet_id cannot be left blank at the same time. The subnet specified by vip_subnet_cidr_id and the subnet specified by ipv6_vip_virsubnet_id must be in the VPC specified by vpc_id.</p> |
| availability_zone_list | Yes | Array of strings | <p>Specifies the list of AZs where the load balancer can be created. You can query the AZs by calling the API (GET https://{ELB_Endpoint}/v3/{project_id}/elb/availability-zones). Select one or more AZs in the same set.</p> |

| Parameter | Mandatory | Type | Description |
|-----------------------|-----------|--|--|
| enterprise_project_id | No | String | Specifies the ID of the enterprise project that the load balancer belongs to. The value cannot be "", "0", or the ID of an enterprise project that does not exist. If this parameter is not passed during resource creation, the resource belongs to the default enterprise project, and 0 will be returned. |
| tags | No | Array of Tag objects | Lists the tags added to the load balancer. Example: "tags": [{"key": "my_tag", "value": "my_tag_value"}] |
| admin_state_up | No | Boolean | Specifies the administrative status of the load balancer. The value can only be true (default). |
| ipv6_bandwidth | No | BandwidthRef object | Specifies the ID of the bandwidth used by an IPv6 address. This parameter is available only when you create or update a load balancer with a public IPv6 address. If you use a new IPv6 address and specify a shared bandwidth, the IPv6 address will be added to the shared bandwidth. |
| publicip_ids | No | Array of strings | Specifies the ID of the EIP the system will automatically assign and bind to the load balancer during load balancer creation. Only the first EIP will be bound to the load balancer although multiple EIP IDs can be set. |
| publicip | No | CreateLoadBalancerPublicIpOption object | Specifies the new EIP that will be bound to the load balancer. |

| Parameter | Mandatory | Type | Description |
|-------------------|-----------|------------------|---|
| elb_virsubnet_ids | No | Array of strings | <p>Lists subnet IDs on the downstream plane. You can query parameter neutron_network_id in the response by calling the API (GET https://{VPC_Endpoint}/v1/{project_id}/subnets).</p> <p>If this parameter is not specified, the subnet IDs will be returned based on the following rules:</p> <ul style="list-style-type: none">• If IPv6 is enabled for a load balancer, the subnet IDs specified in ipv6_vip_virsubnet_id will be returned.• If IPv6 is not enabled for a load balancer, the subnet IDs specified in vip_subnet_cidr_id will be returned.• If a load balancer only works on the public network, the ID of any subnet in the VPC where the load balancer is deployed will be returned. The subnet that has the most available IP addresses is preferred. <p>If there is more than one subnet, the first subnet in the list will be used to assign IP addresses.</p> <p>The subnet must be in the VPC where the load balancer works.</p> |

| Parameter | Mandatory | Type | Description |
|----------------------------|-----------|---------|---|
| ip_target_enable | No | Boolean | <p>Specifies whether to enable IP as a backend. The value can be true (enable IP as a backend) or false (disable IP as a backend). This function cannot be disabled after it is enabled.</p> <p>If you enable this function, you can add servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using their IP addresses.</p> <p>If you enable this function for a dedicated load balancer deployed in a shared VPC, ensure that a VPC peering connection has been created.</p> <p>This function is available only for dedicated load balancers.</p> |
| deletion_protection_enable | No | Boolean | <p>Specifies whether to enable deletion protection for the load balancer.</p> <ul style="list-style-type: none"> • true: Enable deletion protection. • false (default): Disable deletion protection. <p>NOTE Disable deletion protection for all your resources before deleting your account.</p> |

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

Table 4-21 Tag

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| key | No | String | <p>Specifies the tag key.</p> <p>Minimum: 1</p> <p>Maximum: 36</p> |
| value | No | String | <p>Specifies the tag value.</p> <p>Minimum: 0</p> <p>Maximum: 43</p> |

Table 4-22 BandwidthRef

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

Table 4-23 CreateLoadBalancerPublicIpOption

| Parameter | Mandatory | Type | Description |
|--------------|-----------|--|--|
| ip_version | No | Integer | Specifies the IP address version. The value can be 4 (IPv4) or 6 (IPv6). Default: 4 |
| network_type | Yes | String | Specifies the EIP type. The default value is 5_bgp . For more information, see the API for assigning an EIP in the <i>Virtual Private Cloud API Reference</i> . Minimum: 1 Maximum: 36 |
| billing_info | No | String | Provides billing information about the EIP. <ul style="list-style-type: none"> If the value is left blank, the EIP is billed in pay-per-use mode. If the value is not left blank, the EIP is billed on a yearly/monthly basis. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 1024 |
| description | No | String | Provides supplementary information about the EIP. Minimum: 1 Maximum: 255 |
| bandwidth | Yes | CreateLoadBalancerBandwidthOption object | bandwidth |

Table 4-24 CreateLoadBalancerBandwidthOption

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

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

Table 4-25 CreateLoadbalancerAutoscalingOption

| Parameter | Mandatory | Type | Description |
|------------------|-----------|---------|---|
| enable | Yes | Boolean | Specifies whether to enable elastic scaling for the load balancer. Default: false |
| min_l7_flavor_id | No | String | Specifies the ID of the minimum Layer-7 flavor for elastic scaling. This parameter cannot be left blank if there are HTTP or HTTPS listeners. This parameter has been discarded but still can be passed for compatibility reasons. If you specify this parameter, you will be charged for the minimum Layer-7 flavor. Minimum: 1 Maximum: 36 |

Response Parameters

Status code: 201

Table 4-26 Response body parameters

| Parameter | Type | Description |
|-----------------|----------------------------|--|
| loadbalancer | LoadBalancer object | Specifies the load balancer. |
| loadbalancer_id | String | Specifies the load balancer ID. (This parameter is returned when the billing mode of the load balancer is yearly/monthly. This parameter is unsupported. Please do not use it. Minimum: 0 Maximum: 36 |

| Parameter | Type | Description |
|------------|--------|---|
| order_id | String | Specifies the order No. (This parameter is returned when the billing mode of the load balancer is yearly/monthly.) This parameter is unsupported. Please do not use it. Minimum: 0 Maximum: 36 |
| request_id | String | Specifies the request ID. The value is automatically generated. Minimum: 0 Maximum: 36 |

Table 4-27 LoadBalancer

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

| Parameter | Type | Description |
|--------------------|---------------------------------|---|
| operating_status | String | Specifies the operating status of the load balancer. The value can only be ONLINE , indicating that the load balancer is running normally. |
| name | String | Specifies the load balancer name. |
| project_id | String | Specifies the project ID of the load balancer. |
| vip_subnet_cidr_id | String | Specifies the ID of the IPv4 subnet where the load balancer resides. |
| vip_address | String | Specifies the private IPv4 address bound to the load balancer. |
| vip_port_id | String | Specifies the ID of the port bound to the private IPv4 address of the load balancer. |
| tags | Array of Tag objects | Lists the tags added to the load balancer. |
| created_at | String | Specifies the time when the load balancer was created, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> . |
| updated_at | String | Specifies the time when the load balancer was updated, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> . |
| guaranteed | Boolean | Specifies whether the load balancer is a dedicated load balancer. <ul style="list-style-type: none">• true (default): The load balancer is a dedicated load balancer.• false: The load balancer is a shared load balancer. |
| vpc_id | String | Specifies the ID of the VPC where the load balancer resides. |
| eips | Array of EipInfo objects | Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer. This parameter has the same meaning as publicips . |
| ipv6_vip_address | String | Specifies the IPv6 address bound to the load balancer. |
| ipv6_vip_subnet_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. |

| Parameter | Type | Description |
|------------------------|------------------|---|
| availability_zone_list | Array of strings | Specifies the list of AZs where the load balancer is created. |
| enterprise_project_id | String | Specifies the enterprise project ID. If this parameter is not passed during resource creation, "0" will be returned, and the resource belongs to the default enterprise project. "0" is not a valid enterprise project ID and cannot be used in the APIs for creating, updating the load balancer, or querying details of the load balancer. |
| billing_info | String | Provides resource billing information. <ul style="list-style-type: none"> If the value is left blank, the resource is billed in pay-per-use mode. If the value is not left blank, the resource is billed on a yearly/monthly basis. The value is in the format of <i>order_id:product_id:region_id:project_id</i>, for example, CS2107161019CDJZZ:OFFI569702121789763584:az1:057ef081eb00d2732fd1c01a9be75e6f. This parameter is unsupported. Please do not use it. <p>Minimum: 1 Maximum: 1024</p> |
| l4_flavor_id | String | Specifies the ID of a flavor at Layer 4. If autoscaling.enable is set to true , this parameter indicates the ID of the maximum flavor. If l4 is specified, you will be charged by the specifications you select. If L4_elastic_max is specified, you will be charged by how many LCUs you use. All load balancers share underlying resources. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255 |
| l4_scale_flavor_id | String | Specifies the ID of the reserved flavor at Layer 4. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255 |

| Parameter | Type | Description |
|--------------------|---------------------------------------|---|
| l7_flavor_id | String | <p>Specifies the ID of a flavor at Layer 7. If autoscaling.enable is set to true, this parameter indicates the ID of the maximum flavor.</p> <p>If l7 is specified, you will be charged by the specifications you select.</p> <p>If L7_elastic_max is specified, you will be charged by how many LCUs you use. All load balancers share underlying resources. This parameter is unsupported. Please do not use it.</p> <p>Minimum: 1 Maximum: 255</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> <p>Minimum: 1 Maximum: 255</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. Only the first global EIP specified under global_eips will be bound.</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> <ul style="list-style-type: none"> • ipv4: IPv4 subnet • dualstack: subnet that supports IPv4/IPv6 dual stack |

| Parameter | Type | Description |
|----------------------------|---------------------------------------|---|
| ip_target_enable | Boolean | <p>Specifies whether to enable IP as a backend. The value can be true (enable IP as a backend) or false (disable IP as a backend). This function cannot be disabled after it is enabled.</p> <p>If you enable this function, you can add servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using their IP addresses.</p> <p>If you enable this function for a dedicated load balancer deployed in a shared VPC, ensure that a VPC peering connection has been created.</p> <p>This function is available only for dedicated load balancers.</p> |
| frozen_scene | String | <p>Specifies the scenario where the load balancer is frozen. Multiple values are separated using commas (,).</p> |
| ipv6_bandwidth | BandwidthRef object | <p>Specifies the ID of the bandwidth used by an IPv6 address. This parameter is available only when you create or update a load balancer with a public IPv6 address. If you use a new IPv6 address and specify a shared bandwidth, the IPv6 address will be added to the shared bandwidth.</p> |
| deletion_protection_enable | Boolean | <p>Specifies whether to enable deletion protection for the load balancer.</p> <ul style="list-style-type: none"> • true: Enable deletion protection. • false (default): Disable deletion protection. <p>NOTE Disable deletion protection for all your resources before deleting your account.</p> |
| autoscaling | AutoscalingRef object | <p>Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer specifications can be automatically adjusted based on incoming traffic.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter is only available for users on the whitelist. • If elastic scaling is enabled, l4_flavor_id indicates the maximum Layer-4 flavor for elastic scaling. l7_flavor_id indicates the maximum Layer-7 flavor for elastic scaling. <p>This parameter is unsupported. Please do not use it.</p> |

| Parameter | Type | Description |
|---------------------|--------|--|
| public_border_group | String | Specifies the AZ group to which the load balancer belongs. |
| charge_mode | String | Specifies the billing mode. The value can be one of the following: <ul style="list-style-type: none">● flavor: billed by the specifications you will select● lcu: billed by LCU usage |
| waf_failure_action | String | Specifies traffic distributing policies when the WAF is faulty. <ul style="list-style-type: none">● discard: Traffic will not be distributed.● forward: Traffic will be distributed to the default backend servers. Note: This parameter takes effect only when WAF is enabled for the load balancer. This parameter is unsupported. Please do not use it. |
| log_group_id | String | Specifies the ID of the log group that is associated with the load balancer. |
| log_topic_id | String | Specifies the ID of the log topic that is associated with the load balancer. |

Table 4-28 PoolRef

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

Table 4-29 ListenerRef

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the listener ID. |

Table 4-30 Tag

| Parameter | Type | Description |
|-----------|--------|---|
| key | String | Specifies the tag key. Minimum: 1 Maximum: 36 |

| Parameter | Type | Description |
|-----------|--------|---|
| value | String | Specifies the tag value. Minimum: 0 Maximum: 43 |

Table 4-31 EipInfo

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

Table 4-32 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 4-33 GlobalEipInfo

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

Table 4-34 BandwidthRef

| Parameter | Type | Description |
|-----------|--------|------------------------------------|
| id | String | Specifies the shared bandwidth ID. |

Table 4-35 AutoscalingRef

| Parameter | Type | Description |
|------------------|---------|---|
| enable | Boolean | Specifies whether to enable elastic scaling for the load balancer. <ul style="list-style-type: none">● true: Enable elastic scaling.● false (default): Disable elastic scaling. |
| min_l7_flavor_id | String | Specifies the ID of the minimum Layer-7 flavor for elastic scaling. This parameter cannot be left blank if there are HTTP or HTTPS listeners. This parameter has been discarded but still can be passed for compatibility reasons. If you specify this parameter, you will be charged for the minimum Layer-7 flavor Minimum: 1 Maximum: 36 |

Example Requests

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

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

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

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

```
POST https://{ELB_Endpoint}/v3/060576782980d5762f9ec014dd2f1148/elb/loadbalancers
```

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

Example Responses

Status code: 201

Normal response to POST requests.

```
{
  "loadbalancer": {
    "name": "my_loadbalancer",
    "id": "29cc669b-3ac8-4498-9094-bdf6193425c2",
    "project_id": "060576798a80d5762fafc01a9b5eedc7",
    "description": "",
    "vip_port_id": "98697944-0cc7-4d3b-a829-001c2fb82232",
    "vip_address": "192.168.0.214",
    "admin_state_up": true,
    "provisioning_status": "ACTIVE",
    "operating_status": "ONLINE",
    "listeners": [ ],
    "pools": [ ],
    "tags": [ {
      "key": "tab_key",
      "value": "tag1"
    } ],
    "provider": "vlb",
    "created_at": "2023-03-22T07:59:57Z",
    "updated_at": "2023-03-22T07:59:59Z",
    "vpc_id": "a1f33a4c-95b9-48a7-9350-684e2ed844b3",
    "enterprise_project_id": "134f2181-5720-47e7-bd78-1356ed3737d6",
    "availability_zone_list": [ ],
    "ipv6_vip_address": null,
    "ipv6_vip_virusubnet_id": null,
    "ipv6_vip_port_id": null,
    "publicips": [ {
      "publicip_id": "3388574a-4f6f-4471-869e-97d74d21eee9",
      "publicip_address": "88.88.87.205",
      "ip_version": 4
    } ],
    "global_eips": [ ],
    "elb_virusubnet_ids": [ ],
    "elb_virusubnet_type": null,
    "ip_target_enable": false,
    "autoscaling": {
      "enable": false,
      "min_l7_flavor_id": ""
    },
    "frozen_scene": null,
    "public_border_group": "center",
    "eips": [ {
      "eip_id": "3388574a-4f6f-4471-869e-97d74d21eee9",
      "eip_address": "88.88.87.205",
      "ip_version": 4
    } ],
    "guaranteed": false,
    "billing_info": null,
    "l4_flavor_id": null,
    "l4_scale_flavor_id": null,
    "l7_flavor_id": null,
    "l7_scale_flavor_id": null,
    "waf_failure_action": "",
    "vip_subnet_cidr_id": "abf31f3b-706e-4e55-a6dc-f2fcc707fd3a"
  },
  "request_id": "bf29597181cb81b30d19f1a0115a157d"
}
```

Status Codes

| Status Code | Description |
|-------------|-----------------------------------|
| 201 | Normal response to POST requests. |

Error Codes

See [Error Codes](#).

4.4.2 Querying Load Balancers

Function

This API is used to query all load balancers.

Constraints

This API has the following constraints:

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

Calling Method

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

URI

GET /v3/{project_id}/elb/loadbalancers

Table 4-36 Path Parameters

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

Table 4-37 Query Parameters

| Parameter | Mandatory | Type | Description |
|--------------|-----------|---------|---|
| marker | No | String | Specifies the ID of the last record on the previous page. Note: <ul style="list-style-type: none">• This parameter must be used together with limit.• If this parameter is not specified, the first page will be queried.• This parameter cannot be left blank or set to an invalid ID. |
| limit | No | Integer | Specifies the number of records on each page. Minimum: 0 Maximum: 2000 Default: 2000 |
| page_reverse | No | Boolean | Specifies whether to use reverse query. Values: <ul style="list-style-type: none">• true: Query the previous page.• false (default): Query the next page. Note: <ul style="list-style-type: none">• This parameter must be used together with limit.• If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker. |
| id | No | Array | Specifies the load balancer ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> . |
| name | No | Array | 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 | 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 the administrative status of the load balancer. This parameter is unsupported. Please do not use it. |
| provisioning_status | No | Array | 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 | 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 | Specifies the ID of the VPC where the load balancer resides. Multiple IDs can be queried in the format of <i>vpc_id=xxx&vpc_id=xxx</i> . |
| vip_port_id | No | Array | Specifies the ID of the port bound to the private IPv4 address of the load balancer. Multiple IDs can be queried in the format of <i>vip_port_id=xxx&vip_port_id=xx</i> . |
| vip_address | No | Array | Specifies the virtual IP address bound to the load balancer. Multiple virtual IP addresses can be queried in the format of <i>vip_address=xxx&vip_address=xxx</i> . |
| vip_subnet_cidr_id | No | Array | Specifies the ID of the IPv4 subnet where the load balancer resides. Multiple IDs can be queried in the format of <i>vip_subnet_cidr_id=xxx&vip_subnet_cidr_id=xxx</i> . |
| ipv6_vip_port_id | No | Array | Specifies the ID of the port bound to the IPv6 address of the load balancer. Multiple ports can be queried in the format of <i>ipv6_vip_port_id=xxx&ipv6_vip_port_id=xxx</i> . |
| ipv6_vip_address | No | Array | Specifies the IPv6 address bound to the load balancer. Multiple IPv6 addresses can be queried in the format of <i>ipv6_vip_address=xxx&ipv6_vip_address=xxx</i> . |

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

| Parameter | Mandatory | Type | Description |
|------------------------|-----------|-------|--|
| publicips | No | Array | <p>Specifies the IPv4 EIP bound to the load balancer. The following is an example:</p> <pre>"publicips": [{ "publicip_id": "e9b72a9d-4275-455e-a724-853504e4d9c6", "publicip_address": "88.88.14.122", "ip_version": 4 }]</pre> <p>Multiple EIPs can be queried.</p> <ul style="list-style-type: none"> • If publicip_id is used as the query condition, the format is <i>publicips=publicip_id=xxx&publicips=publicip_id=xxx.</i> • If publicip_address is used as the query condition, the format is <i>*publicips=publicip_address=xxx&publicips=publicip_address=xxx.</i> • If ip_version is used as the query condition, the format is <i>publicips=ip_version=xxx&publicips=ip_version=xxx.</i> <p>Note that this parameter has the same meaning as eips.</p> |
| availability_zone_list | No | Array | <p>Specifies the list of AZs where the load balancer is created.</p> <p>Multiple AZs can be queried in the format of <i>availability_zone_list=xxx&availability_zone_list=xxx.</i></p> |
| l4_flavor_id | No | Array | <p>Specifies the ID of a flavor at Layer 4.</p> <p>Multiple IDs can be queried in the format of <i>l4_flavor_id=xxx&l4_flavor_id=xxx.</i></p> <p>This parameter is unsupported. Please do not use it.</p> |

| Parameter | Mandatory | Type | Description |
|---------------------------------|-----------|-------|--|
| <code>l4_scale_flavor_id</code> | No | Array | <p>Specifies the ID of the elastic flavor at Layer 4, which is reserved for now.</p> <p>Multiple flavors can be queried in the format of <i>l4_scale_flavor_id=xxx&l4_scale_flavor_id=xxx</i>.</p> <p>This parameter is unsupported. Please do not use it.</p> |
| <code>l7_flavor_id</code> | No | Array | <p>Specifies the ID of a flavor at Layer 7.</p> <p>Multiple flavors can be queried in the format of <i>l7_flavor_id=xxx&l7_flavor_id=xxx</i>.</p> <p>This parameter is unsupported. Please do not use it.</p> |
| <code>l7_scale_flavor_id</code> | No | Array | <p>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.</p> |
| <code>member_device_id</code> | No | Array | <p>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.</p> <p>Multiple IDs can be queried in the format of <i>member_device_id=xxx&member_device_id=xxx</i>.</p> |

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

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

Request Parameters

Table 4-38 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 4-39 Response body parameters

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

Table 4-40 LoadBalancer

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

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

| Parameter | Type | Description |
|------------------------|------------------|---|
| ipv6_vip_port_id | String | Specifies the ID of the port bound to the IPv6 address of the load balancer. |
| availability_zone_list | Array of strings | Specifies the list of AZs where the load balancer is created. |
| enterprise_project_id | String | Specifies the enterprise project ID. If this parameter is not passed during resource creation, "0" will be returned, and the resource belongs to the default enterprise project. "0" is not a valid enterprise project ID and cannot be used in the APIs for creating, updating the load balancer, or querying details of the load balancer. |
| billing_info | String | Provides resource billing information. <ul style="list-style-type: none"> If the value is left blank, the resource is billed in pay-per-use mode. If the value is not left blank, the resource is billed on a yearly/monthly basis. The value is in the format of <i>order_id:product_id:region_id:project_id</i>, for example, CS2107161019CDJZZ:OFFI569702121789763584:az1:057ef081eb00d2732fd1c01a9be75e6f. This parameter is unsupported. Please do not use it. <p>Minimum: 1 Maximum: 1024</p> |
| l4_flavor_id | String | Specifies the ID of a flavor at Layer 4. If autoscaling.enable is set to true , this parameter indicates the ID of the maximum flavor. If l4 is specified, you will be charged by the specifications you select. If L4_elastic_max is specified, you will be charged by how many LCUs you use. All load balancers share underlying resources. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255 |

| Parameter | Type | Description |
|--------------------|---------------------------------------|--|
| l4_scale_flavor_id | String | Specifies the ID of the reserved flavor at Layer 4. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255 |
| l7_flavor_id | String | Specifies the ID of a flavor at Layer 7. If autoscaling.enable is set to true , this parameter indicates the ID of the maximum flavor. If l7 is specified, you will be charged by the specifications you select. If L7_elastic_max is specified, you will be charged by how many LCUs you use. All load balancers share underlying resources. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255 |
| l7_scale_flavor_id | String | Specifies the ID of the reserved flavor at Layer 7. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255 |
| publicips | Array of PublicIpInfo objects | Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer. This parameter has the same meaning as eips . |
| global_eips | Array of GlobalEipInfo objects | Specifies the global EIP bound to the load balancer. Only the first global EIP specified under global_eips will be bound. |
| elb_virsubnet_ids | Array of strings | Lists the IDs of subnets on the downstream plane. |
| elb_virsubnet_type | String | Specifies the type of the subnet on the downstream plane. <ul style="list-style-type: none"> • ipv4: IPv4 subnet • dualstack: subnet that supports IPv4/IPv6 dual stack |

| Parameter | Type | Description |
|----------------------------|---------------------------------------|---|
| ip_target_enable | Boolean | <p>Specifies whether to enable IP as a backend. The value can be true (enable IP as a backend) or false (disable IP as a backend). This function cannot be disabled after it is enabled.</p> <p>If you enable this function, you can add servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using their IP addresses.</p> <p>If you enable this function for a dedicated load balancer deployed in a shared VPC, ensure that a VPC peering connection has been created.</p> <p>This function is available only for dedicated load balancers.</p> |
| frozen_scene | String | <p>Specifies the scenario where the load balancer is frozen. Multiple values are separated using commas (,).</p> |
| ipv6_bandwidth | BandwidthRef object | <p>Specifies the ID of the bandwidth used by an IPv6 address. This parameter is available only when you create or update a load balancer with a public IPv6 address. If you use a new IPv6 address and specify a shared bandwidth, the IPv6 address will be added to the shared bandwidth.</p> |
| deletion_protection_enable | Boolean | <p>Specifies whether to enable deletion protection for the load balancer.</p> <ul style="list-style-type: none"> • true: Enable deletion protection. • false (default): Disable deletion protection. <p>NOTE Disable deletion protection for all your resources before deleting your account.</p> |
| autoscaling | AutoscalingRef object | <p>Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer specifications can be automatically adjusted based on incoming traffic.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter is only available for users on the whitelist. • If elastic scaling is enabled, l4_flavor_id indicates the maximum Layer-4 flavor for elastic scaling. l7_flavor_id indicates the maximum Layer-7 flavor for elastic scaling. <p>This parameter is unsupported. Please do not use it.</p> |

| Parameter | Type | Description |
|---------------------|--------|--|
| public_border_group | String | Specifies the AZ group to which the load balancer belongs. |
| charge_mode | String | Specifies the billing mode. The value can be one of the following: <ul style="list-style-type: none">● flavor: billed by the specifications you will select● lcu: billed by LCU usage |
| waf_failure_action | String | Specifies traffic distributing policies when the WAF is faulty. <ul style="list-style-type: none">● discard: Traffic will not be distributed.● forward: Traffic will be distributed to the default backend servers. Note: This parameter takes effect only when WAF is enabled for the load balancer. This parameter is unsupported. Please do not use it. |
| log_group_id | String | Specifies the ID of the log group that is associated with the load balancer. |
| log_topic_id | String | Specifies the ID of the log topic that is associated with the load balancer. |

Table 4-41 PoolRef

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

Table 4-42 ListenerRef

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the listener ID. |

Table 4-43 Tag

| Parameter | Type | Description |
|-----------|--------|---|
| key | String | Specifies the tag key. Minimum: 1 Maximum: 36 |

| Parameter | Type | Description |
|-----------|--------|---|
| value | String | Specifies the tag value. Minimum: 0 Maximum: 43 |

Table 4-44 EipInfo

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

Table 4-45 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 4-46 GlobalEipInfo

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

Table 4-47 BandwidthRef

| Parameter | Type | Description |
|-----------|--------|------------------------------------|
| id | String | Specifies the shared bandwidth ID. |

Table 4-48 AutoscalingRef

| Parameter | Type | Description |
|------------------|---------|---|
| enable | Boolean | Specifies whether to enable elastic scaling for the load balancer. <ul style="list-style-type: none">• true: Enable elastic scaling.• false (default): Disable elastic scaling. |
| min_l7_flavor_id | String | Specifies the ID of the minimum Layer-7 flavor for elastic scaling. This parameter cannot be left blank if there are HTTP or HTTPS listeners. This parameter has been discarded but still can be passed for compatibility reasons. If you specify this parameter, you will be charged for the minimum Layer-7 flavor Minimum: 1 Maximum: 36 |

Table 4-49 PageInfo

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

Example Requests

- Querying load balancers on each page
GET https://{ELB_Endpoint}/v3/b2782e6708b8475c993e6064bc456bf8/elb/loadbalancers?limit=2&marker=87627cb6-9ff1-4580-984f-cc564fa9fc34
- Querying load balancers using multiple IDs
GET https://{ELB_Endpoint}/v3/b2782e6708b8475c993e6064bc456bf8/elb/loadbalancers?id=87627cb6-9ff1-4580-984f-cc564fa9fc34&id=09e86f09-03fc-440e-8132-03f3e149e979

Example Responses

Status code: 200

Successful request.

```
{
  "request_id" : "46b7d911-cece-408c-a2cc-55c78ab025d8",
  "loadbalancers" : [ {
    "id" : "65672f7e-2024-4c39-9198-98249da479c5",
    "project_id" : "057ef081eb00d2732fd1c01a9be75e6f",
    "name" : "dxq_2021_07_26_11_12_37",
```

```
"description" : "",
"vip_port_id" : "b289f890-a6fa-4405-a9cc-fe62b8a3bed0",
"vip_address" : "172.16.0.152",
"admin_state_up" : true,
"provisioning_status" : "ACTIVE",
"operating_status" : "ONLINE",
"listeners" : [ {
  "id" : "dc9572eb-a5b2-47b3-a982-44892d833892"
} ],
"pools" : [ {
  "id" : "dc6b01c4-f704-4427-a4c2-21cd5f58d177"
} ],
"tags" : [ ],
"provider" : "vlb",
"created_at" : "2021-07-26T03:12:37Z",
"updated_at" : "2021-07-26T03:12:37Z",
"vpc_id" : "6e0ee31f-7a46-4530-b32f-ce41f30959d4",
"enterprise_project_id" : "0",
"availability_zone_list" : [ "az1" ],
"ipv6_vip_address" : "2001:db8:a583:4cb:d6b8:f8b4:4211:fe72",
"ipv6_vip_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_virsubnet_ids" : [ "7f817f9c-8731-4002-9e47-18cb8d431787" ],
"elb_virsubnet_type" : "dualstack",
"ip_target_enable" : false,
"autoscaling" : {
  "enable" : false,
  "min_l7_flavor_id" : ""
},
"frozen_scene" : null,
"eips" : [ {
  "eip_id" : "0c07e04d-e2f9-41ad-b934-f58a65b6734d",
  "eip_address" : "97.97.2.171",
  "ip_version" : 4
} ],
"guaranteed" : true,
"billing_info" : null,
"l4_flavor_id" : "636ba721-935a-4ca5-a685-8076ce0e4148",
"l4_scale_flavor_id" : null,
"l7_flavor_id" : null,
"l7_scale_flavor_id" : null,
"vip_subnet_cidr_id" : null,
"public_border_group" : "center",
"log_topic_id" : null,
"log_group_id" : null
}],
"page_info" : {
  "next_marker" : "cce5318e-c79a-4f68-94a2-9fb285c6efbe",
  "previous_marker" : "65672f7e-2024-4c39-9198-98249da479c5",
  "current_count" : 2
}
}
```

Status Codes

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

Error Codes

See [Error Codes](#).

4.4.3 Viewing Details of a Load Balancer

Function

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

Calling Method

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

URI

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

Table 4-50 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 4-51 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 4-52 Response body parameters

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

Table 4-53 LoadBalancer

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

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

| Parameter | Type | Description |
|------------------------|--|---|
| guaranteed | Boolean | Specifies whether the load balancer is a dedicated load balancer. <ul style="list-style-type: none"> • true (default): The load balancer is a dedicated load balancer. • false: The load balancer is a shared load balancer. |
| vpc_id | String | Specifies the ID of the VPC where the load balancer resides. |
| eips | Array of EipInfo objects | Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer. This parameter has the same meaning as publicips . |
| ipv6_vip_address | String | Specifies the IPv6 address bound to the load balancer. |
| ipv6_vip_virusubnet_id | String | Specifies the ID of the IPv6 subnet where the load balancer resides. |
| ipv6_vip_port_id | String | Specifies the ID of the port bound to the IPv6 address of the load balancer. |
| availability_zone_list | Array of strings | Specifies the list of AZs where the load balancer is created. |
| enterprise_project_id | String | Specifies the enterprise project ID. If this parameter is not passed during resource creation, "0" will be returned, and the resource belongs to the default enterprise project. "0" is not a valid enterprise project ID and cannot be used in the APIs for creating, updating the load balancer, or querying details of the load balancer. |
| billing_info | String | Provides resource billing information. <ul style="list-style-type: none"> • If the value is left blank, the resource is billed in pay-per-use mode. • If the value is not left blank, the resource is billed on a yearly/monthly basis. The value is in the format of <i>order_id:product_id:region_id:project_id</i>, for example, CS2107161019CDJZZ:OFFI569702121789763584:az1:057ef081eb00d2732fd1c01a9be75e6f. This parameter is unsupported. Please do not use it. <p>Minimum: 1 Maximum: 1024</p> |

| Parameter | Type | Description |
|--------------------|---------------------------------------|---|
| l4_flavor_id | String | <p>Specifies the ID of a flavor at Layer 4. If autoscaling.enable is set to true, this parameter indicates the ID of the maximum flavor.</p> <p>If l4 is specified, you will be charged by the specifications you select.</p> <p>If L4_elastic_max is specified, you will be charged by how many LCUs you use. All load balancers share underlying resources. This parameter is unsupported. Please do not use it.</p> <p>Minimum: 1 Maximum: 255</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> <p>Minimum: 1 Maximum: 255</p> |
| l7_flavor_id | String | <p>Specifies the ID of a flavor at Layer 7. If autoscaling.enable is set to true, this parameter indicates the ID of the maximum flavor.</p> <p>If l7 is specified, you will be charged by the specifications you select.</p> <p>If L7_elastic_max is specified, you will be charged by how many LCUs you use. All load balancers share underlying resources. This parameter is unsupported. Please do not use it.</p> <p>Minimum: 1 Maximum: 255</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> <p>Minimum: 1 Maximum: 255</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. Only the first global EIP specified under global_eips will be bound.</p> |

| Parameter | Type | Description |
|----------------------------|-------------------------------------|--|
| elb_virsubnet_ids | Array of strings | Lists the IDs of subnets on the downstream plane. |
| elb_virsubnet_type | String | Specifies the type of the subnet on the downstream plane. <ul style="list-style-type: none">● ipv4: IPv4 subnet● dualstack: subnet that supports IPv4/IPv6 dual stack |
| ip_target_enable | Boolean | Specifies whether to enable IP as a backend. The value can be true (enable IP as a backend) or false (disable IP as a backend). This function cannot be disabled after it is enabled. If you enable this function, you can add servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using their IP addresses. If you enable this function for a dedicated load balancer deployed in a shared VPC, ensure that a VPC peering connection has been created. This function is available only for dedicated load balancers. |
| frozen_scene | String | Specifies the scenario where the load balancer is frozen. Multiple values are separated using commas (,). |
| ipv6_bandwidth | BandwidthRef object | Specifies the ID of the bandwidth used by an IPv6 address. This parameter is available only when you create or update a load balancer with a public IPv6 address. If you use a new IPv6 address and specify a shared bandwidth, the IPv6 address will be added to the shared bandwidth. |
| deletion_protection_enable | Boolean | Specifies whether to enable deletion protection for the load balancer. <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 | Type | Description |
|---------------------|---------------------------------------|---|
| autoscaling | AutoscalingRef object | <p>Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer specifications can be automatically adjusted based on incoming traffic.</p> <p>Note:</p> <ul style="list-style-type: none">This parameter is only available for users on the whitelist.If elastic scaling is enabled, l4_flavor_id indicates the maximum Layer-4 flavor for elastic scaling. l7_flavor_id indicates the maximum Layer-7 flavor for elastic scaling. <p>This parameter is unsupported. Please do not use it.</p> |
| public_border_group | String | Specifies the AZ group to which the load balancer belongs. |
| charge_mode | String | <p>Specifies the billing mode. The value can be one of the following:</p> <ul style="list-style-type: none">flavor: billed by the specifications you will selectlcu: billed by LCU usage |
| waf_failure_action | String | <p>Specifies traffic distributing policies when the WAF is faulty.</p> <ul style="list-style-type: none">discard: Traffic will not be distributed.forward: Traffic will be distributed to the default backend servers. <p>Note: This parameter takes effect only when WAF is enabled for the load balancer.</p> <p>This parameter is unsupported. Please do not use it.</p> |
| log_group_id | String | Specifies the ID of the log group that is associated with the load balancer. |
| log_topic_id | String | Specifies the ID of the log topic that is associated with the load balancer. |

Table 4-54 PoolRef

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

Table 4-55 ListenerRef

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the listener ID. |

Table 4-56 Tag

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

Table 4-57 EipInfo

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

Table 4-58 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 4-59 GlobalEipInfo

| Parameter | Type | Description |
|---------------|--------|-------------------------------------|
| global_eip_id | String | Specifies the ID of the global EIP. |

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

Table 4-60 BandwidthRef

| Parameter | Type | Description |
|-----------|--------|------------------------------------|
| id | String | Specifies the shared bandwidth ID. |

Table 4-61 AutoscalingRef

| Parameter | Type | Description |
|------------------|---------|---|
| enable | Boolean | Specifies whether to enable elastic scaling for the load balancer. <ul style="list-style-type: none">• true: Enable elastic scaling.• false (default): Disable elastic scaling. |
| min_l7_flavor_id | String | Specifies the ID of the minimum Layer-7 flavor for elastic scaling. This parameter cannot be left blank if there are HTTP or HTTPS listeners. This parameter has been discarded but still can be passed for compatibility reasons. If you specify this parameter, you will be charged for the minimum Layer-7 flavor Minimum: 1 Maximum: 36 |

Example Requests

Querying details of a given load balancer

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

Example Responses

Status code: 200

Successful request.

```
{  
  "loadbalancer": {
```

```

    "id" : "3dbde7e5-c277-4ea3-a424-edd339357eff",
    "project_id" : "060576782980d5762f9ec014dd2f1148",
    "name" : "elb-l4-no-delete",
    "description" : null,
    "vip_port_id" : "f079c7ee-65a9-44ef-be86-53d8927e59be",
    "vip_address" : "10.0.0.196",
    "admin_state_up" : true,
    "provisioning_status" : "ACTIVE",
    "operating_status" : "ONLINE",
    "listeners" : [ ],
    "pools" : [ {
      "id" : "1d864dc9-f6ef-4366-b59d-7034cde2328f"
    }, {
      "id" : "c0a2e4a1-c028-4a24-a62f-e721c52f5513"
    }, {
      "id" : "79308896-6169-4c28-acbc-e139eb661996"
    } ],
    "tags" : [ ],
    "provider" : null,
    "created_at" : "2019-12-02T09:55:11Z",
    "updated_at" : "2019-12-02T09:55:11Z",
    "vpc_id" : "70711260-9de9-4d96-9839-0ae698e00109",
    "enterprise_project_id" : "0",
    "availability_zone_list" : [ ],
    "ipv6_vip_address" : null,
    "ipv6_vip_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](#).

4.4.4 Updating a Load Balancer

Function

This API is used to update a load balancer.

Calling Method

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

URI

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

Table 4-62 Path Parameters

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

Request Parameters

Table 4-63 Request header parameters

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

Table 4-64 Request body parameters

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

Table 4-65 UpdateLoadBalancerOption

| Parameter | Mandatory | Type | Description |
|----------------|-----------|---------|---|
| name | No | String | Specifies the load balancer name. Minimum: 0 Maximum: 255 |
| admin_state_up | No | Boolean | Specifies the administrative status of the load balancer. The value can only be true . |
| description | No | String | Provides supplementary information about the load balancer. Minimum: 0 Maximum: 255 |

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

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

| Parameter | Mandatory | Type | Description |
|----------------|-----------|----------------------------|---|
| vip_address | No | String | <p>Specifies the private IPv4 address bound to the load balancer. The IP address must be from the IPv4 subnet where the load balancer resides and should not be occupied by other services.</p> <p>vip_address can be updated only when guaranteed is set to true.</p> <p>Minimum: 1 Maximum: 36</p> |
| l4_flavor_id | No | String | <p>Specifies the ID of a flavor at Layer 4.</p> <p>All load balancers share underlying resources. This parameter is unsupported. Please do not use it.</p> <p>Minimum: 1 Maximum: 255</p> |
| l7_flavor_id | No | String | <p>Specifies the ID of a flavor at Layer 7.</p> <p>All load balancers share underlying resources. This parameter is unsupported. Please do not use it.</p> <p>Minimum: 1 Maximum: 36</p> |
| ipv6_bandwidth | No | BandwidthRef object | <p>Specifies the ID of the bandwidth used by an IPv6 address. This parameter is available only when you create or update a load balancer with a public IPv6 address. If you use a new IPv6 address and specify a shared bandwidth, the IPv6 address will be added to the shared bandwidth.</p> |

| Parameter | Mandatory | Type | Description |
|------------------|-----------|---------|---|
| ip_target_enable | No | Boolean | <p>Specifies whether to enable IP as a backend. The value can be true (enable IP as a backend) or false (disable IP as a backend). This function cannot be disabled after it is enabled.</p> <p>If you enable this function, you can add servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using their IP addresses.</p> <p>If you enable this function for a dedicated load balancer deployed in a shared VPC, ensure that a VPC peering connection has been created.</p> <p>This function is available only for dedicated load balancers.</p> |

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

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

Table 4-66 BandwidthRef

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

Table 4-67 UpdateLoadbalancerAutoscalingOption

| Parameter | Mandatory | Type | Description |
|------------------|-----------|---------|---|
| enable | Yes | Boolean | Specifies whether to enable elastic scaling the load balancer. The options are as follows: <ul style="list-style-type: none"> • true: Enable deletion protection. • false: Disable deletion protection. Default: false |
| min_l7_flavor_id | No | String | Specifies the ID of the minimum Layer-7 flavor for elastic scaling. This parameter cannot be left blank if there are HTTP or HTTPS listeners. This parameter has been discarded but still can be passed for compatibility reasons. If you specify this parameter, you will be charged for the minimum Layer-7 flavor. Minimum: 1 Maximum: 36 |

Response Parameters

Status code: 200

Table 4-68 Response body parameters

| Parameter | Type | Description |
|-----------------|----------------------------|---|
| loadbalancer | LoadBalancer object | Specifies the load balancer. |
| loadbalancer_id | String | Specifies the load balancer ID. This parameter is returned when the billing mode of the load balancer is yearly/monthly. This parameter is unsupported. Please do not use it. Minimum: 0 Maximum: 36 |

| Parameter | Type | Description |
|------------|--------|---|
| order_id | String | Specifies the order No. This parameter is returned when the billing mode of the load balancer is yearly/monthly. This parameter is unsupported. Please do not use it. Minimum: 0 Maximum: 36 |
| request_id | String | Specifies the request ID. The value is automatically generated. Minimum: 0 Maximum: 36 |

Table 4-69 LoadBalancer

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

| Parameter | Type | Description |
|--------------------|---------------------------------|---|
| operating_status | String | Specifies the operating status of the load balancer. The value can only be ONLINE , indicating that the load balancer is running normally. |
| name | String | Specifies the load balancer name. |
| project_id | String | Specifies the project ID of the load balancer. |
| vip_subnet_cidr_id | String | Specifies the ID of the IPv4 subnet where the load balancer resides. |
| vip_address | String | Specifies the private IPv4 address bound to the load balancer. |
| vip_port_id | String | Specifies the ID of the port bound to the private IPv4 address of the load balancer. |
| tags | Array of Tag objects | Lists the tags added to the load balancer. |
| created_at | String | Specifies the time when the load balancer was created, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> . |
| updated_at | String | Specifies the time when the load balancer was updated, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> . |
| guaranteed | Boolean | Specifies whether the load balancer is a dedicated load balancer. <ul style="list-style-type: none">• true (default): The load balancer is a dedicated load balancer.• false: The load balancer is a shared load balancer. |
| vpc_id | String | Specifies the ID of the VPC where the load balancer resides. |
| eips | Array of EipInfo objects | Specifies the EIP bound to the load balancer. Only one EIP can be bound to a load balancer. This parameter has the same meaning as publicips . |
| ipv6_vip_address | String | Specifies the IPv6 address bound to the load balancer. |
| ipv6_vip_subnet_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. |

| Parameter | Type | Description |
|------------------------|------------------|---|
| availability_zone_list | Array of strings | Specifies the list of AZs where the load balancer is created. |
| enterprise_project_id | String | Specifies the enterprise project ID. If this parameter is not passed during resource creation, "0" will be returned, and the resource belongs to the default enterprise project. "0" is not a valid enterprise project ID and cannot be used in the APIs for creating, updating the load balancer, or querying details of the load balancer. |
| billing_info | String | Provides resource billing information. <ul style="list-style-type: none"> If the value is left blank, the resource is billed in pay-per-use mode. If the value is not left blank, the resource is billed on a yearly/monthly basis. The value is in the format of <i>order_id:product_id:region_id:project_id</i>, for example, CS2107161019CDJZZ:OFFI569702121789763584:az1:057ef081eb00d2732fd1c01a9be75e6f. This parameter is unsupported. Please do not use it. <p>Minimum: 1 Maximum: 1024</p> |
| l4_flavor_id | String | Specifies the ID of a flavor at Layer 4. If autoscaling.enable is set to true , this parameter indicates the ID of the maximum flavor. If l4 is specified, you will be charged by the specifications you select. If L4_elastic_max is specified, you will be charged by how many LCUs you use. All load balancers share underlying resources. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255 |
| l4_scale_flavor_id | String | Specifies the ID of the reserved flavor at Layer 4. This parameter is unsupported. Please do not use it. Minimum: 1 Maximum: 255 |

| Parameter | Type | Description |
|--------------------|---------------------------------------|---|
| l7_flavor_id | String | <p>Specifies the ID of a flavor at Layer 7. If autoscaling.enable is set to true, this parameter indicates the ID of the maximum flavor.</p> <p>If l7 is specified, you will be charged by the specifications you select.</p> <p>If L7_elastic_max is specified, you will be charged by how many LCUs you use. All load balancers share underlying resources. This parameter is unsupported. Please do not use it.</p> <p>Minimum: 1 Maximum: 255</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> <p>Minimum: 1 Maximum: 255</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. Only the first global EIP specified under global_eips will be bound.</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> <ul style="list-style-type: none"> • ipv4: IPv4 subnet • dualstack: subnet that supports IPv4/IPv6 dual stack |

| Parameter | Type | Description |
|----------------------------|---------------------------------------|---|
| ip_target_enable | Boolean | <p>Specifies whether to enable IP as a backend. The value can be true (enable IP as a backend) or false (disable IP as a backend). This function cannot be disabled after it is enabled.</p> <p>If you enable this function, you can add servers in a VPC connected through a VPC peering connection, in a VPC connected through a cloud connection, or in an on-premises data center at the other end of a Direct Connect or VPN connection, by using their IP addresses.</p> <p>If you enable this function for a dedicated load balancer deployed in a shared VPC, ensure that a VPC peering connection has been created.</p> <p>This function is available only for dedicated load balancers.</p> |
| frozen_scene | String | <p>Specifies the scenario where the load balancer is frozen. Multiple values are separated using commas (,).</p> |
| ipv6_bandwidth | BandwidthRef object | <p>Specifies the ID of the bandwidth used by an IPv6 address. This parameter is available only when you create or update a load balancer with a public IPv6 address. If you use a new IPv6 address and specify a shared bandwidth, the IPv6 address will be added to the shared bandwidth.</p> |
| deletion_protection_enable | Boolean | <p>Specifies whether to enable deletion protection for the load balancer.</p> <ul style="list-style-type: none"> • true: Enable deletion protection. • false (default): Disable deletion protection. <p>NOTE Disable deletion protection for all your resources before deleting your account.</p> |
| autoscaling | AutoscalingRef object | <p>Specifies information about elastic scaling. If elastic scaling is enabled, the load balancer specifications can be automatically adjusted based on incoming traffic.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter is only available for users on the whitelist. • If elastic scaling is enabled, l4_flavor_id indicates the maximum Layer-4 flavor for elastic scaling. l7_flavor_id indicates the maximum Layer-7 flavor for elastic scaling. <p>This parameter is unsupported. Please do not use it.</p> |

| Parameter | Type | Description |
|---------------------|--------|--|
| public_border_group | String | Specifies the AZ group to which the load balancer belongs. |
| charge_mode | String | Specifies the billing mode. The value can be one of the following: <ul style="list-style-type: none">● flavor: billed by the specifications you will select● lcu: billed by LCU usage |
| waf_failure_action | String | Specifies traffic distributing policies when the WAF is faulty. <ul style="list-style-type: none">● discard: Traffic will not be distributed.● forward: Traffic will be distributed to the default backend servers. Note: This parameter takes effect only when WAF is enabled for the load balancer. This parameter is unsupported. Please do not use it. |
| log_group_id | String | Specifies the ID of the log group that is associated with the load balancer. |
| log_topic_id | String | Specifies the ID of the log topic that is associated with the load balancer. |

Table 4-70 PoolRef

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

Table 4-71 ListenerRef

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the listener ID. |

Table 4-72 Tag

| Parameter | Type | Description |
|-----------|--------|---|
| key | String | Specifies the tag key. Minimum: 1 Maximum: 36 |

| Parameter | Type | Description |
|-----------|--------|---|
| value | String | Specifies the tag value. Minimum: 0 Maximum: 43 |

Table 4-73 EipInfo

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

Table 4-74 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 4-75 GlobalEipInfo

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

Table 4-76 BandwidthRef

| Parameter | Type | Description |
|-----------|--------|------------------------------------|
| id | String | Specifies the shared bandwidth ID. |

Table 4-77 AutoscalingRef

| Parameter | Type | Description |
|------------------|---------|---|
| enable | Boolean | Specifies whether to enable elastic scaling for the load balancer. <ul style="list-style-type: none">● true: Enable elastic scaling.● false (default): Disable elastic scaling. |
| min_l7_flavor_id | String | Specifies the ID of the minimum Layer-7 flavor for elastic scaling. This parameter cannot be left blank if there are HTTP or HTTPS listeners. This parameter has been discarded but still can be passed for compatibility reasons. If you specify this parameter, you will be charged for the minimum Layer-7 flavor Minimum: 1 Maximum: 36 |

Example Requests

Modifying the description and name of a load balancer

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

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

Example Responses

Status code: 200

Successful request.

```
{
  "request_id": "010dad1e-32a3-4405-ab83-62a1fc5f8722",
  "loadbalancer": {
    "id": "2e073bf8-edfe-4e51-a699-d915b0b8af89",
    "project_id": "b2782e6708b8475c993e6064bc456bf8",
    "name": "loadbalancer-update",
    "description": "loadbalancer",
    "vip_port_id": null,
    "vip_address": null,
    "admin_state_up": true,
    "provisioning_status": "ACTIVE",
    "operating_status": "ONLINE",
    "listeners": [ {
      "id": "41937176-bf64-4b58-8e0d-9ff2d0d32c54"
    }, {
      "id": "abc6ac93-ad0e-4765-bd5a-eec632efde56"
    }, {
      "id": "b9d8ba97-6d60-467d-838d-f3550b54c22a"
    }, {
      "id": "fd797ebd-263d-4b18-96e9-e9188d36c69e"
    }
  ],
}
```

```
"pools" : [ {
  "id" : "0aabcaa8-c35c-4ddc-a60c-9032d0ac0b80"
}, {
  "id" : "165d9092-396e-4a8d-b398-067496a447d2"
} ],
"tags" : [ ],
"provider" : "vlb",
"created_at" : "2019-04-20T03:10:37Z",
"updated_at" : "2019-05-24T02:11:58Z",
"vpc_id" : "2037c5bb-e04b-4de2-9300-9051af18e417",
"enterprise_project_id" : "0",
"availability_zone_list" : [ "AZ1", "AZ2", "dc3" ],
"ipv6_vip_address" : null,
"ipv6_vip_virsubnet_id" : null,
"ipv6_vip_port_id" : null,
"eips" : [ ],
"guaranteed" : true,
"billing_info" : null,
"l4_flavor_id" : null,
"l4_scale_flavor_id" : null,
"l7_flavor_id" : null,
"l7_scale_flavor_id" : null,
"vip_subnet_cidr_id" : null,
"deletion_protection_enable" : false,
"public_border_group" : "center"
}
}
```

Status Codes

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

Error Codes

See [Error Codes](#).

4.4.5 Deleting a Load Balancer

Function

This API is used to delete a load balancer.

Constraints

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

Calling Method

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

URI

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

Table 4-78 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 4-79 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](#).

4.4.6 Querying the Status Tree of a Load Balancer

Function

This API is used to query the status tree of a load balancer and to show information about all resources associated with the load balancer.

When **admin_state_up** is set to **false** and **operating_status** to **OFFLINE** for a backend server, **DISABLED** is returned for **operating_status** of the backend server in the response of this API.

Calling Method

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

URI

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

Table 4-80 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 4-81 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 4-82 Response body parameters

| Parameter | Type | Description |
|-----------|---|---|
| statuses | LoadBalancerStatusResult object | Provides information about the load balancer status tree. |

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

Table 4-83 LoadBalancerStatusResult

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

Table 4-84 LoadBalancerStatus

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

| Parameter | Type | Description |
|------------------|--------|--|
| 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 4-85 LoadBalancerStatusListener

| Parameter | Type | Description |
|---------------------|---|--|
| name | String | <p>Specifies the name of the listener added to the load balancer.</p> <p>Minimum: 1</p> <p>Maximum: 255</p> |
| provisioning_status | String | <p>Specifies the provisioning status of the listener. The value can only be ACTIVE, indicating that the listener is successfully provisioned.</p> |
| pools | Array of LoadBalancerStatusPool objects | <p>Specifies the operating status of the backend server group associated with the listener.</p> |
| l7policies | Array of LoadBalancerStatusPolicy objects | <p>Specifies the operating status of the forwarding policy added to the listener.</p> |
| id | String | <p>Specifies the listener ID.</p> |

| Parameter | Type | Description |
|------------------|--------|---|
| operating_status | String | <p>Specifies the operating status of the listener. 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. Note: DEGRADED and DISABLED are returned only when the API for querying the load balancer status tree is called. |

Table 4-86 LoadBalancerStatusPolicy

| Parameter | Type | Description |
|---------------------|--|---|
| action | String | <p>Specifies whether requests are forwarded to another backend server group or redirected to an HTTPS listener. The value can be one of the following:</p> <ul style="list-style-type: none"> ● REDIRECT_TO_POOL: Requests are forwarded to another backend server group. ● REDIRECT_TO_LISTENER: Requests are redirected to an HTTPS listener. |
| id | String | Specifies the forwarding policy ID. |
| provisioning_status | String | <p>Specifies the provisioning status of the forwarding policy.</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. |
| name | String | <p>Specifies the policy name.</p> <p>Minimum: 1 Maximum: 255</p> |
| rules | Array of LoadBalancerStatusL7Rule objects | Specifies the forwarding rule. |

Table 4-87 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 4-88 LoadBalancerStatusPool

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

| Parameter | Type | Description |
|------------------|--------|--|
| operating_status | String | <p>Specifies the operating status of the backend server group.</p> <p>The value can be one of the following:</p> <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. <p>Note: DEGRADED and DISABLED are returned only when the API for querying the load balancer status tree is called.</p> |

Table 4-89 LoadBalancerStatusHealthMonitor

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

Table 4-90 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. |

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

Example Requests

Querying the status tree of a load balancer

```
GET https://{ELB_Endpoint}/v3/{project_id}/elb/loadbalancers/38278031-cfca-44be-81be-a412f618773b/statuses
```

Example Responses

Status code: 200

Successful request.

```
{
  "statuses": {
    "loadbalancer": {
      "name": "lb-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 4-91 Path Parameters

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

Request Parameters

Table 4-92 Request header parameters

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

Table 4-93 Request body parameters

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

Table 4-94 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. |

| Parameter | Mandatory | Type | Description |
|-------------|-----------|--------|---|
| certificate | Yes | String | <p>Specifies the body of the certificate required by HTTPS listeners. The value must be PEM encoded.</p> <p>Maximum 65,536 character length is allowed, supports certificate chains with a maximum of 11 layers (including certificates and certificate chains).</p> |
| description | No | String | <p>Provides supplementary information about the certificate.</p> <p>Minimum: 0 Maximum: 255</p> |
| domain | No | String | <p>Specifies the domain names used by the server certificate. This parameter will take effect only when type is set to server.</p> <ul style="list-style-type: none"> • The value can contain 0 to 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 starts with an asterisk (*). Example: *.test.com <p>Minimum: 0 Maximum: 10000</p> |

| Parameter | Mandatory | Type | Description |
|-----------------------|-----------|--------|--|
| name | No | String | Specifies the certificate name. Minimum: 0 Maximum: 255 |
| private_key | No | String | Specifies the private key of the certificate used by HTTPS listeners. The value can contain up to 8,192 PEM encoded characters. Note: <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. Minimum: 1 Maximum: 32 |
| type | No | String | Specifies the certificate type. The value can be server or client . server indicates server certificates, and client indicates CA certificates. The default value is server . |
| enterprise_project_id | No | String | Specifies the ID of the enterprise project that the certificate belongs to. |

Response Parameters

Status code: 201

Table 4-95 Response body parameters

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

| Parameter | Type | Description |
|-------------|-------------------------------|----------------------------|
| certificate | CertificateInfo object | Specifies the certificate. |

Table 4-96 CertificateInfo

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

| Parameter | Type | Description |
|-------------|--------|---|
| private_key | String | Specifies the private key of the server certificate. The value must be PEM encoded. <ul style="list-style-type: none"> This parameter will be ignored even if type is set to client. A CA certificate can still be created and used normally. This parameter is valid and mandatory only when type is set to server. If you enter an invalid private key, an error is returned. |
| 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

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-----
\nMIIIEvglBADANBgkqhkiG9w0BAQEFAASCBAgEAAoIBAQQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KcN1nfzTvl2ksXITQ2o9BkpStnPe\ntB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nMD30gLh6QoP3cq7PGWcuZKv7hjd1tjCTQukMvqV8lcq39buNplgDOWzEP5AqzXt
\nCOFYn6RTH5SRug4hKNN7sT1eYMsIHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Ch\nZAPYUBkl/
0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwLCRLU08k\nEo04Z9H/
AgMBAAECCgEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\nfvCARftGgMaYWPNSCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUsHfgZjv5OQB
\nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8ISEtq8YaXngBO6vE59LMhHkNKKR\nciu9YkInNEHu6uRJ5g/
eGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M\nEGpfYI6AdHlwFZct/
RNAxhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7Ale\nkrgruPtV1vWklg
+bUFhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\nXUqgCZO8MKeV2jf2drLxRRwRL33SksQbzAQ/qRLd7GP3sCGqvKxWY2FPdFy8kx
\nGcCeZPcleZYQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjP7dt
\nJ7n8EzkRUNE6alMHOFeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\niWgTWHXPZxUqaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
\nS6VjoTkF6r7VZoILXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU\nxns40yldp6wKBgQC69Cp/
xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB\n1lVQhELGI9CbKsZdKM71GyElmix/
T7FnJSHIWh01qVo6AQyduNwNAQD15pr8KAd\nXGXAZZ1FQcb3KYa
+2ffLERmazdOTWjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak\n/735uP20KKqhNehZpC2dJei7OitgRhCS/
dKASUXHSW4fptBnUxACYocdDxtY4Vha\nfl7FPMdVGl8ioYbvlHFh
```

```
+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAOGBAJKD4wHW54Pwd4Ctfk9o
\nHjWB7pQlUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDJKxfciXKcsYr9lIuk
\nfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BULGKMWXzuEd\n3fy
+1rCUwzOp9LSjtYf4ege\n-----END PRIVATE KEY-----",
  "certificate" : "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgICERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nb21wYW55IENBMB4XDTE4MDcwMjEzMDU0N1oXDTQ1MTEwNzEzMDU0N1owFDESMBAG
\nA1UEAwwJbG9jYWxob3N0MIIIBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAn0FQGzi3ucTX
+DNud1p/
b4XVM6I3rY7+Cfge5GMLDIUHXCFcGp19Z3807yNpLF5\nU0NqPQZKUrZz3rQeLN9mYiUTJPutYIFDDbB8Ctl
gV+eyU9yYJslWx/Bm5kWNPh9\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/
W7jaS\nlAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylYKy4zgnv1tn/K
\nny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPLZUUn7yw3nkOOtLMl28IEv0WY
\nYd77CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t\nnhwQKuuUvJhwR/
AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGqSIsb3DQEBcWUA
\nnjiOyQ83va672K1G9s8n6xlH+xwwdSNnozaKzC87vwSeZKIOd9I5I98TGKI6OoDa
\nnezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRlyzlp1HMnI6hkjPk4PCZ
\n\nKha0dlScati9CCt3UzXSNJOSLalKdHErH08lqd+1BchScx Cfk0xNITn1HZZGml\n
+vbmunok3A2luc14rnsrbcKGYqGikySN6B2cRLBDK4Y3wChiW6NVVtVqcx5/mZ\nniYsGDVN+9QBd0eYUHce
+77s96i3l\n-----END CERTIFICATE-----"
}
}
```

Example Responses

Status code: 201

Normal response to POST requests.

```
{
  "certificate" : {
    "private_key" : "-----BEGIN PRIVATE KEY-----
MIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J
+87kYwsMhRcqdCj8KcN1nfzTvl2ksXLTQ2o9BkpStnPetB4s32ZiJRMlk
+61iUUMNsHwK2WBX57J3JgmyVbH8GbmRY0+H3sH1i72luna7rMMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCT
QukwMvqV8lccq39buNplgDOWzEP5AzaqXtCOFYn6RTH55Rug4hKNN7sT1eYMsIHu7wtEBDKVgrLjOce/
W2f8rLT1zEsoAW2ChlZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjwbwgs/RbJh3slwLCRLU08kEo04Z9H/
AgMBAAECCggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD605XY2fUieh8/
HlfvCarftGgMaYWPSNcJRMXB7tPwpQu19esjz4Z/
cR2Je4fTLPrffGUsHfGzjv5OQBZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8ISETq8YaXngBO6vES9LMhHkNK
Krciu9YkInNEHu6uRJ5g/eGGX3KQynTvIhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9MEGpFY16AdHlwFzCT/
RNAxhP82lg2gUJSgAu66FFdJmWQXKbafKdP3zq4Up8a7AlekrguPtfv1vWklg
+bUfhGgaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CTXUqgCZo8MKeV2jf2drLxRRwRL33SksQbzAQ/
qrLdT7GP3sCGqvkvxWY2FPdFYf8kxGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGbuQoPSPH7JNF3Tm/JH/
fbwjP7dtU7n8EzkRUNE6aIMHOFEEych/
PQKBgQDmf1bMogx63rTcwQ0PEZ9V7mTgTKYK4aLriWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7y
QiYWU
+wthAr9urbWYdGZIS6VjoTkF6r7VZolLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBUxs40Yldp6w
KBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB1LVQhELGI9CbKsDzKM71GyElmix/
T7FnJSHIWh01qVo6AQyduNwnAQD15pr8KAdXGAXZ1FQcb3KYa
+2fflERmazdOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak/735uP20KkqhNehZpC2dJei7OilRhCS/
dKASUXHSW4fptBnUxACYodDxtY4VhafI7FPMdvgI8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa
+2cFm1Agf7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAOGBAJKD4wHW54Pwd4Ctfk9ojHjWB7pQlUYpT
ZO9dm
+4fpCMn9Okf43AE2yAOaAP94GdzdDJKxfciXKcsYr9lIukfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO3
8a5gZaOm/BULGKMWXzuEd3fy+1rCUwzOp9LSjtYf4ege\n-----END PRIVATE KEY-----",
    "description" : "",
    "domain" : null,
    "created_at" : "2019-03-31T22:23:51Z",
    "expire_time" : "2045-11-17T13:25:47Z",
    "id" : "233a325e5e3e4ce8beeb320aa714cc12",
    "name" : "My Certificate",
    "certificate" : "-----BEGIN CERTIFICATE-----
MIIC4TCCAcmgAwIBAgICERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXIDb21wYW55IENBMB4XDTE4MDcwMjEzMDU0N1oXDTQ1MTEwNzEzMDU0N1owFDESMBAG
\nA1UEAwwJbG9jYWxob3N0MIIIBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAn0FQGzi3ucTX+DNud1p/
b4XVM6I3rY7+Cfge5GMLDIUHXCFcGp19Z3807yNpLF5U0NqPQZKUrZz3rQeLN9mYiUTJPutYIFDDbB8CtlgV+eyU9yYJslWx/Bm5kWNPh9\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/
W7jaS\nlAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylYKy4zgnv1tn/K
\nny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPLZUUn7yw3nkOOtLMl28IEv0WY
\nYd77CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t\nnhwQKuuUvJhwR/
AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGqSIsb3DQEBcWUA
\nnjiOyQ83va672K1G9s8n6xlH+xwwdSNnozaKzC87vwSeZKIOd9I5I98TGKI6OoDa
\nnezmzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRlyzlp1HMnI6hkjPk4PCZ
\n\nKha0dlScati9CCt3UzXSNJOSLalKdHErH08lqd+1BchScx Cfk0xNITn1HZZGml\n
+vbmunok3A2luc14rnsrbcKGYqGikySN6B2cRLBDK4Y3wChiW6NVVtVqcx5/mZ\nniYsGDVN+9QBd0eYUHce
+77s96i3l\n-----END CERTIFICATE-----"
  }
}
```

```
+eyU9yYJslWx/Bm5kWNPh97B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/  
W7jaSIazlsx+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/  
Ky09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPLZUUn7yw3nkOOTLMI28IEv0WyYd7CMJQkS1NPJBKNOGfR/  
wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29thwQKuUvJhwR/  
AAABMBMGA1UdJQMMGAoGCCsGAQUFBwMBMA0GCsqGSIb3DQEBcwUAA4IBAQA8IMQJxaTey7EjXtRLSVL  
EAMftAQPG6jijNQuvIBQYUDauDT4W2XUZ5wAnjiOyQ83va672K1G9s8n6xIH  
+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKl6OoDaetzCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPR  
LYlzp1HMni6hkjPk4PCZwKnha0dlScati9CCt3UzXSNJOSLalKdHErH08lqd+1BchScxCfk0xNITn1HZZGml  
+vbmunok3A2luc14rnsrckbGYqGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZiYsGDVN+9QBd0eYUHce  
+77s96i3I-----END CERTIFICATE-----",  
  "admin_state_up" : true,  
  "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",  
  "updated_at" : "2019-03-31T23:26:49Z",  
  "type" : "server"  
},  
"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 4-97 Path Parameters

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

Table 4-98 Query Parameters

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

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

Request Parameters

Table 4-99 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 4-100 Response body parameters

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

Table 4-101 PageInfo

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

Table 4-102 CertificateInfo

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

| Parameter | Type | Description |
|-------------|--------|---|
| domain | String | <p>Specifies the domain names used by the server certificate. This parameter will take effect only when type is set to server.</p> <ul style="list-style-type: none">The value can contain 0 to 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.comA wildcard domain name is a domain name starts with an asterisk (*). Example: *.test.com <p>Minimum: 1 Maximum: 10000</p> |
| id | String | Specifies the certificate ID. |
| name | String | <p>Specifies the certificate name.</p> <p>Minimum: 1 Maximum: 255</p> |
| private_key | String | <p>Specifies the private key of the server certificate. The value must be PEM encoded.</p> <ul style="list-style-type: none">This parameter will be ignored even if type is set to client. A CA certificate can still be created and used normally.This parameter is valid and mandatory only when type is set to server. If you enter an invalid private key, an error is returned. |
| type | String | <p>Specifies the certificate type. The value can be server or client. server indicates server certificates, and client indicates CA certificates. The default value is server.</p> |
| created_at | String | Specifies the time when the certificate was created. |
| updated_at | String | Specifies the time when the certificate was updated. |
| expire_time | String | Specifies the time when the certificate expires. |
| project_id | String | Specifies the project ID of the certificate. |

Example Requests

Querying certificates

```
GET https://{ELB_Endpoint}/v3/{project_id}/elb/certificates
```

Example Responses

Status code: 200

Successful request.

```
{
  "certificates" : [ {
    "id" : "5494a835d88f40ff940554992f2f04d4",
    "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
    "name" : "https_certificatekkkk",
    "type" : "server",
    "domain" : null,
    "description" : "description for certificatehhhh",
    "private_key" : "-----BEGIN PRIVATE KEY-----
MIIeVglBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J
+B7kYwsMhRcgdcj8KCnX1nfzTvl2ksXITQ2o9BkpStnPetB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rMMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCT
KukwMvqV8lCq39buNplgDOWzEP5AzqXtCOFYn6RTH5SRug4hKNN7sT1eYMsIHu7wtEBDKVgrLjOCe/
W2f8rLT1zEsoAW2ChlZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjwbwS/RbJh3slwLCRLU08kEo04Z9H/
AgMBAAEcGgEAElleaQqHCWZk/HyYN0Am/GJSgFa2tD605XY2fUieh8/
HlfvCARftGgMaYWPSNcJRMXB7tPwpQu19esjz4Z/
cR2Je4fTLPrffGUsHfGzjv5OQBZVe4a5Hj1OcgJYhwCqPs2d9i2wToYnBbcfgh8lSETq8YaXngBO6vES9LMhHkNK
Krciu9YklnNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9c9MEGpYfI6AdHlwFZcT/
RNAxhP82lg2gUJSgAu66FfdjMwQXKbafKdP3zq4Up8a7AlekrGuPtFv1vWklg
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    "created_at" : "2019-04-21T18:59:43Z",
    "updated_at" : "2019-04-21T18:59:43Z",
    "expire_time" : "2045-11-17T13:25:47Z"
  } ], {
    "id" : "7875ccb4c6b44cdb90ab2ab89892ab71",
    "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
    "name" : "https_certificatekkkk",

```

```
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"description" : "description for certificatehhhh",
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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"
}, {
"id" : "7f41c96223d34ebaa3c8e836b6625ec0",
"project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
"name" : "asdf",
"type" : "server",
"domain" : "sda.com",
"description" : "",
"private_key" : "-----BEGIN PRIVATE KEY-----
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```

```
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  "certificate" : "-----BEGIN CERTIFICATE-----
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+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"
}],
"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 Viewing Details of a Certificate

Function

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

Calling Method

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

URI

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

Table 4-103 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 4-104 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 4-105 Response body parameters

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

Table 4-106 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. |

| Parameter | Type | Description |
|-------------|--------|---|
| description | String | Provides supplementary information about the certificate. Minimum: 1 Maximum: 255 |
| domain | String | Specifies the domain names used by the server certificate. This parameter will take effect only when type is set to server . <ul style="list-style-type: none">• The value can contain 0 to 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 starts with an asterisk (*). Example: *.test.com Minimum: 1 Maximum: 10000 |
| id | String | Specifies the certificate ID. |
| name | String | Specifies the certificate name. Minimum: 1 Maximum: 255 |
| private_key | String | Specifies the private key of the server certificate. The value must be PEM encoded. <ul style="list-style-type: none">• This parameter will be ignored even if type is set to client. A CA certificate can still be created and used normally.• This parameter is valid and mandatory only when type is set to server. If you enter an invalid private key, an error is returned. |
| 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

Viewing details of a certificate

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

Example Responses

Status code: 200

Successful request.

```
{
  "certificate": {
    "id": "5494a835d88f40ff940554992f2f04d4",
    "project_id": "99a3fff0d03c428eac3678da6a7d0f24",
    "name": "https_certificatekkkk",
    "type": "server",
    "domain": null,
    "description": "description for certificatehhhh",
    "private_key": "-----BEGIN PRIVATE KEY-----
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QiYWU
+wthAr9urbWYdGZIS6VjoTkF6r7VZoLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBUxs40yldp6w
KBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB1lVQhELGI9CbKsDzKM71GyElmix/
T7FnJSHIWlho1qVo6AQyduNwNAQD15pr8KAdXGAXAZZ1FQcb3KYa
+2fflERmazdOTwJYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak/735uP20KKqhNehZpC2dJei7OilRhCS/
dKASUXHSW4fptBnUxACYocdDxtY4Vhaf17FPMdvG18ioYbvLHFh+X0Xs9r1S8yeWnHoXmb6eXWmYKMrAoveLa
+2cFm1Agf7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLaGBAJKD4wHW54PwD4CtFk9ojHjWB7pQLUYpT
ZO9dm
+4fpCMn9Okf43AE2yAOaAP94GdzdDJKxfciXKcsYr9lIukfaoXgjKR7p1zERiWzUFF63SB4aiyX1H7IX0MwHDZQO3
8a5gZaOm/BUIGKMWXzuEd3fy+1rCUwzOp9LSjtYf4ege-----END PRIVATE KEY-----",
    "certificate": "-----BEGIN CERTIFICATE-----
MIIC4TCCAcmgAwIBAgICEREWdQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMNTXlDb21wYyW55IENBMB4X
DTE4MDcwMjEzMDU0N1oXDTE4MDU0N1owFDESMBAGA1UEAwwJbG9jYXVob3N0MIIBIjANBgkqh
kiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA0FQZ3ucTX+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUHXfCgP19Z3807yNpLF5U0NqPQZKUrZz3rQeLN9mYiUTJZPutYlFDDbB8CtIgV
+eyU9yYslWx/Bm5kWNPh97B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/
W7jaSiAzlsxD+QM6l7QjhWj+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/
Ky09cxLKAftgoZWQD2FAZJf97k1kYNwqITz3CPILZUUn7yw3nkOOtLMI28IEv0WyYd7CMIJQks1NPJBKNOGfR/
```

```
wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29thwQKuUvJhwR/
AAABMBMGAA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBCwUAA4IBAQA8IMQJxaTey7EjXtRSLVl
EAMftAQPG6jijNQuviBQYUDauDT4W2XUZ5wAnjiOyQ83va672K1G9s8n6xIH
+xxwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDaezmcwQYtHBMVQ4c7MI8554Ft1mWSt4dMAK2rzNYjvPR
LYlzp1HMni6hkjPk4PCZwKlnha0dlScatI9CCt3UzXSNJOSLalKdHerH08lqd+1BchScxCfk0xNITn1HZZGml
+vbmunok3A2luc114rnsrbcKGYqxGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/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"
},
"request_id" : "a94af450-5ac0-4185-946c-27a59a16c1d3"
}
```

Status Codes

| Status Code | Description |
|-------------|--|
| 200 | Successful request. |
| 400 | Invalid request parameter. |
| 403 | Failed to verify the token. |
| 404 | The queried resource does not exist. |
| 431 | The request headers are too large. |
| 494 | The request header or cookie is too large. |
| 500 | System error. |

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 4-107 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 4-108 Request header parameters

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

Table 4-109 Request body parameters

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

Table 4-110 UpdateCertificateOption

| Parameter | Mandatory | Type | Description |
|-------------|-----------|--------|--|
| certificate | No | String | Specifies the private key of the certificate. The value must be PEM encoded. Maximum 65,536 character length is allowed, supports certificate chains with a maximum of 11 layers (including certificates and certificate chains). |
| description | No | String | Provides supplementary information about the certificate. Minimum: 0 Maximum: 255 |

| Parameter | Mandatory | Type | Description |
|-------------|-----------|--------|---|
| name | No | String | Specifies the certificate name. Minimum: 0 Maximum: 255 |
| private_key | No | String | Specifies the private key of the server certificate. The value must be PEM encoded. <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. A maximum of 8,192 characters is allowed. |
| domain | No | String | Specifies the domain names used by the server certificate. This parameter will take effect only when type is set to server . <ul style="list-style-type: none"> • The value can contain 0 to 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 starts with an asterisk (*). Example: *.test.com Minimum: 0 Maximum: 10000 |

Response Parameters

Status code: 200

Table 4-111 Response body parameters

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

Table 4-112 CertificateInfo

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

| Parameter | Type | Description |
|-------------|--------|--|
| id | String | Specifies the certificate ID. |
| name | String | Specifies the certificate name. Minimum: 1 Maximum: 255 |
| private_key | String | Specifies the private key of the server certificate. The value must be PEM encoded. <ul style="list-style-type: none">This parameter will be ignored even if type is set to client. A CA certificate can still be created and used normally.This parameter is valid and mandatory only when type is set to server. If you enter an invalid private key, an error is returned. |
| 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/  
233a325e5e3e4ce8beeb320aa714cc12
```

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

Example Responses

Status code: 200

Successful request.

```
{  
  "certificate": {  
    "private_key": "-----BEGIN PRIVATE KEY-----  
MIIEvglBADANBgkqhkiG9w0BAQEFAASCbKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M253Wn9vhdUzojetjv4J
```

```
+B7kYwsMhRcgdcj8KcN1nfzTvl2ksXITQ2o9BkpStnPetB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rMMD30gH6QoP3cq7PGWcuZKV7hjd1tjCT
KukwMvqV8lcq39buNplgDOWzEP5AqzXtCOFYn6RTH5SRug4hKNN7sT1eYMSlHu7wtEBDKVgrLjOCe/
W2f8rLT1zEsoAW2ChlZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjwbwS/RbJh3slwLCRLU08kEo04Z9H/
AgMBAAECggEAeEaQqHCWZk/HyYn0Am/GJSGFa2tD60SXY2fUieh8/
HlfvCARftGgMaYWPNSCJRMXB7tPwpQu19esjz4Z/
cR2Je4FTLPrffGUsHFgZjv5OQBZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8ISETq8YaXngBO6vES9LMhHkNK
Rrciu9YkInNEHu6uRJ5g/eGGX3KQynTvlhOVGAJvJTXcoU6fm7gYdHAD6jk9lc9MEGpYfI6AdHlwFzcT/
RNAXhP82lg2gUJSgAu66FFdJmWQXKbafKdP3zq4Up8a7AlekrGuPtfV1vWklg
+bUFhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CTXUqgCZo8MKeV2jf2drlxRRwRL33SksQbzAQ/
qrLdT7GP3sCGqvkvWY2FPdFy8kxGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGbuQoPSph7JNF3Tm/JH/
fbwjP7dtU7n8EzkRUNE6aIMHOFEeych/
PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLriWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7y
QiYWU
+wthAr9urbWYdGZIS6VjoTkF6r7VZoLXX0fbuXh6lm8K8lQRfBpJff56p9pMwaBpDNDrfpHB5utBUxs40Yldp6w
KBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB1lVQhELGI9CbKsdzKM71GyElmix/
T7FnJSHIwIho1qVo6AQyduNwNAQD15pr8KAdXGAZZ1FQcb3KYa
+2fllERmazdOTwYz0tGqZnXkEeMdSLkmlqICRigWhGQKBgDak/735uP20KKqhNehZpC2dJei7OilRhCS/
dKASUXHSW4fptBnUxACYocDxtY4Vhaf17FPMdvGL8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMJrAoveLa
+zcFm1Agf7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9ojHjWB7pQUiYpT
ZO9dm
+4fpCMn9Okf43AE2yAOaAP94GdzdDjkxfciXKcsYr9lIukfaoXgjKR7p1zERiWzUff63SB4aiyX1H7IX0MwHDZQO3
8a5GzaOm/BUIGKMWXzuEd3fy+1rCUwzOp9LSjtYf4ege-----END PRIVATE KEY-----",
  "description" : "Update my Certificate.",
  "domain" : null,
  "created_at" : "2019-03-31T22:23:51Z",
  "expire_time" : "2045-11-17T13:25:47Z",
  "id" : "233a325e5e3e4ce8beeb320aa714cc12",
  "name" : "My Certificate",
  "certificate" : "-----BEGIN CERTIFICATE-----
MIIC4TCCAcmgAwIBAgICERewDQYJKoZIhvcNAQELBQAwFzEVMBMGGA1UEAxMMTXlDb21wYW55IENBMB4X
DTE4MDcwMjEzZmU0N1oXDTQ1MTE5NzEzZmU0N1owFDESMBAGA1UEAwwJbG9jYXVob3N0M0IIBjANBgkqh
kiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAFQgZi3ucTX+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5U0NqPQZKUrZz3rQeLn9mYiUTJZPutYFDDB8CtLgV
+eyU9yYJslWx/Bm5kWNPh97B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6fCHKt/
W7jaSIazlsx+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/
Ky09cxLKAFtgoZWQD2FAZJf9F7k1kYNwqITz3CPLZUUn7yw3nkOOTLMI28IEv0WYyYd7CMJQks1NPJBKNOGfR/
wiDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29thwQKuUvJhwR/
AAABMBMGGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGCSqGSIb3DQEBCwUAA4IBAQA8IMQJxaTey7EjXtRSLVl
EAMftAQP6gjjNQuvIBQYUDauDT4W2XUZ5wAnjiOyQ83va672K1G9s8n6xIH
+xwwdSNnozaKzC87vwSeZKI0dl9I5I98TGKI6OoDaetzCwQYtHBMVQ4c7Ml8554Ft1mWst4dMAK2rzNYjvPR
LYlp1HMnl6hkjPk4PCZwKnha0dlScati9Cct3UzXSNJOSLalKdHERH08lqd+1BchScxCfk0xNITn1HZZGml
+vbmunok3A2luc14rnsrbckGYqxGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZiYsGDVN+9QBd0eYUHce
+77s96i3l-----END CERTIFICATE-----",
  "admin_state_up" : true,
  "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
  "updated_at" : "2019-03-31T23:26:49Z",
  "type" : "server"
},
"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 4-113 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 4-114 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 4-115 Path Parameters

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

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 | CreateSecurityPolicyOption object | Specifies the custom security policy. |

Table 4-118 CreateSecurityPolicyOption

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

| Parameter | Mandatory | Type | Description |
|-----------|-----------|------------------|---|
| ciphers | Yes | Array of strings | <p>Lists the cipher suites supported by the custom security policy. The following cipher suites are supported: ECDHE-RSA-AES256-GCM-SHA384,ECDHE-RSA-AES128-GCM-SHA256,ECDHE-ECDSA-AES256-GCM-SHA384,ECDHE-ECDSA-AES128-GCM-SHA256,AES128-GCM-SHA256,AES256-GCM-SHA384,ECDHE-ECDSA-AES128-SHA256,ECDHE-RSA-AES128-SHA256,AES128-SHA256,AES256-SHA256,ECDHE-ECDSA-AES256-SHA384,ECDHE-RSA-AES256-SHA384,ECDHE-ECDSA-AES128-SHA,ECDHE-RSA-AES128-SHA,ECDHE-RSA-AES256-SHA,ECDHE-ECDSA-AES256-SHA,AES128-SHA,AES256-SHA,CAMELLIA128-SHA,DES-CBC3-SHA,CAMELLIA256-SHA,ECDHE-RSA-CHACHA20-POLY1305,ECDHE-ECDSA-CHACHA20-POLY1305,TLS_AES_128_GCM_SHA256,TLS_AES_256_GCM_SHA384,TLS_CHACHA20_POLY1305_SHA256,TLS_AES_128_CCM_SHA256,TLS_AES_128_CCM_8_SHA256</p> <p>Note:</p> <ul style="list-style-type: none"> • The protocol and cipher suite must match. At least one cipher suite must match the protocol. • You can match the protocol and cipher suite based on system security policy. <p>Array Length: 1 - 30</p> |

Response Parameters

Status code: 201

Table 4-119 Response body parameters

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

Table 4-120 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

Creating a custom security policy and specifying the TLS protocol and cipher suite

```
POST https://{ELB_Endpoint}/v3/7a9941d34fc1497d8d0797429ecfd354/elb/security-policies
```

```
{
  "security_policy": {
    "name": "test_1",
    "description": "test1",
    "protocols": [ "TLSv1.2", "TLSv1", "TLSv1.3" ],
    "ciphers": [ "ECDHE-ECDSA-AES128-SHA", "TLS_AES_128_GCM_SHA256",
"TLS_AES_128_CCM_8_SHA256" ]
  }
}
```

Example Responses

Status code: 201

Normal response to POST requests.

```
{
  "request_id": "6b50d914-41f2-4e50-8929-e8a9837dbe75",
  "security_policy": {
    "id": "d74e27c9-4d60-427c-a11f-21142117c433",
    "name": "test_1",
    "project_id": "7a9941d34fc1497d8d0797429ecfd354",
    "description": "test1",
    "protocols": [ "TLSv1.2", "TLSv1", "TLSv1.3" ],
    "ciphers": [ "ECDHE-ECDSA-AES128-SHA", "TLS_AES_128_GCM_SHA256",
"TLS_AES_128_CCM_8_SHA256" ],
    "listeners": [ ],
    "created_at": "2021-03-26T01:33:12Z",
    "updated_at": "2021-03-26T01:33:12Z"
  }
}
```

Status Codes

| Status Code | Description |
|-------------|-----------------------------------|
| 201 | Normal response to POST requests. |

Error Codes

See [Error Codes](#).

4.6.2 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 4-122 Path Parameters

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

Table 4-123 Query Parameters

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

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

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

Request Parameters

Table 4-124 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 4-125 Response body parameters

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

Table 4-126 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 4-127 ListenerRef

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the listener ID. |

Table 4-128 PageInfo

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

Example Requests

Querying custom security policies on each page

```
GET https://{ELB_Endpoint}/v3/7a9941d34fc1497d8d0797429ecfd354/elb/security-policies?limit=2
```

Example Responses

Status code: 200

Successful request.

```
{
  "request_id": "88424a61-6fa1-4850-aa8b-ce31d78abcf2",
  "security_policies": [ {
    "id": "03cf511a-d130-445e-9b02-12d7049ddabf",
    "name": "test_security_policy",
    "project_id": "7a9941d34fc1497d8d0797429ecfd354",
    "description": "",
    "protocols": [ "TLSv1", "TLSv1.3" ],
    "ciphers": [ "AES128-SHA", "TLS_AES_128_GCM_SHA256", "TLS_AES_256_GCM_SHA384",
"TLS_CHACHA20_POLY1305_SHA256", "TLS_AES_128_CCM_SHA256", "TLS_AES_128_CCM_8_SHA256" ],
    "listeners": [ {
      "id": "6f7c0d75-81c4-4735-87a0-dc5df0f27f5a"
    } ],
    "created_at": "2021-02-06T10:07:10Z",
    "updated_at": "2021-02-06T10:07:10Z"
  }, {
    "id": "04e5d426-628c-42db-867c-fcaefbed2cab",
    "name": "update_securitypolicy",
    "project_id": "7a9941d34fc1497d8d0797429ecfd354",
    "description": "",
    "protocols": [ "TLSv1.2", "TLSv1.1", "TLSv1.3" ],
    "ciphers": [ "CAMELLIA128-SHA", "TLS_AES_256_GCM_SHA384", "TLS_CHACHA20_POLY1305_SHA256",
"TLS_AES_128_CCM_SHA256", "TLS_AES_128_CCM_8_SHA256" ],
    "listeners": [ {
      "id": "e19b7379-807e-47fb-b53d-46aff540580c"
    } ],
    "created_at": "2021-02-06T10:01:58Z",
    "updated_at": "2021-03-20T07:18:59Z"
  } ],
  "page_info": {
    "next_marker": "04e5d426-628c-42db-867c-fcaefbed2cab",
    "previous_marker": "03cf511a-d130-445e-9b02-12d7049ddabf",
    "current_count": 2
  }
}
```

Status Codes

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

Error Codes

See [Error Codes](#).

4.6.3 Querying Details of a Custom Security Policy

Function

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

Calling Method

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

URI

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

Table 4-129 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 4-130 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 4-131 Response body parameters

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

Table 4-132 SecurityPolicy

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

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

Table 4-133 ListenerRef

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the listener ID. |

Example Requests

Querying details of a custom security policy

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

Example Responses

Status code: 200

Successful request.

```
{
  "security_policy": {
    "id": "c73e0138-9bdc-40fb-951e-6a1598266ccd",
    "name": "update_securitypolicy",
    "project_id": "7a9941d34fc1497d8d0797429ecfd354",
    "description": "",
    "protocols": [ "TLSv1", "TLSv1.1", "TLSv1.2", "TLSv1.3" ],
    "ciphers": [ "AES128-SHA", "AES256-GCM-SHA384", "ECDHE-ECDSA-AES128-GCM-SHA256", "ECDHE-RSA-AES256-GCM-SHA384", "ECDHE-RSA-AES256-SHA", "TLS_AES_128_GCM_SHA256", "TLS_AES_256_GCM_SHA384", "TLS_CHACHA20_POLY1305_SHA256", "TLS_AES_128_CCM_SHA256", "TLS_AES_128_CCM_8_SHA256" ],
    "listeners": [ {
      "id": "8e92b7c3-cdae-4039-aa62-c76d09a5950a"
    } ],
    "created_at": "2021-03-20T09:48:14Z",
    "updated_at": "2021-03-20T12:45:50Z"
  },
}
```

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

Status Codes

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

Error Codes

See [Error Codes](#).

4.6.4 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 4-134 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 4-135 Request header parameters

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

Table 4-136 Request body parameters

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

Table 4-137 UpdateSecurityPolicyOption

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

| Parameter | Mandatory | Type | Description |
|-----------|-----------|------------------|--|
| ciphers | No | Array of strings | <p>Lists the cipher suites supported by the custom security policy. The following cipher suites are supported:</p> <p>ECDHE-RSA-AES256-GCM-SHA384,ECDHE-RSA-AES128-GCM-SHA256,ECDHE-ECDSA-AES256-GCM-SHA384,ECDHE-ECDSA-AES128-GCM-SHA256,AES128-GCM-SHA256,AES256-GCM-SHA384,ECDHE-ECDSA-AES128-SHA256,ECDHE-RSA-AES128-SHA256,AES128-SHA256,AES256-SHA256,ECDHE-ECDSA-AES256-SHA384,ECDHE-RSA-AES256-SHA384,ECDHE-ECDSA-AES128-SHA,ECDHE-RSA-AES128-SHA,ECDHE-RSA-AES256-SHA,ECDHE-ECDSA-AES256-SHA,AES128-SHA,AES256-SHA,CAMELLIA128-SHA,DES-CBC3-SHA,CAMELLIA256-SHA,ECDHE-RSA-CHACHA20-POLY1305,ECDHE-ECDSA-CHACHA20-POLY1305,TLS_AES_128_GCM_SHA256,TLS_AES_256_GCM_SHA384,TLS_CHACHA20_POLY1305_SHA256,TLS_AES_128_CCM_SHA256,TLS_AES_128_CCM_8_SHA256</p> <p>Note:</p> <ul style="list-style-type: none"> The protocol and cipher suite must match. At least one cipher suite must match the protocol. You can match the protocol and cipher suite based on system security policy. <p>Array Length: 1 - 30</p> |

Response Parameters

Status code: 200

Table 4-138 Response body parameters

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

Table 4-139 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 4-140 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 4-141 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 4-142 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 4-143 Path Parameters

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

Request Parameters

Table 4-144 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 4-145 Response body parameters

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

Table 4-146 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:ECDFHE-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:ECDFHE-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:ECDFHE-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:DHE-RSA-AES128-SHA:ECDFHE-RSA-AES256-SHA:AES128-SHA:AES256-
SHA:DHE-DSS-AES128-SHA:CAMELLIA128-SHA:EDH-RSA-DES-CBC3-SHA:DES-CBC3-SHA:ECDFHE-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:ECDFHE-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:ECDFHE-RSA-AES256-SHA:AES128-SHA:AES256-SHA"
  }, {
    "name" : "tls-1-2",
    "project_id" : "7a9941d34fc1497d8d0797429ecfd354",

```

```
"protocols" : "TLSv1.2",
"cipher" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-ECDSA-AES256-
SHA:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-
GCM-SHA384:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-RSA-AES256-
SHA384:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:AES128-SHA:AES256-SHA"
}, {
"project_id" : "7a9941d34fc1497d8d0797429ecfd354",
"protocols" : "TLSv1.2",
"cipher" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-
GCM-SHA256:AES128-GCM-SHA256:AES256-GCM-SHA384:ECDHE-RSA-AES128-SHA256:AES128-
SHA256:AES256-SHA256:ECDHE-RSA-AES256-SHA384"
}, {
"project_id" : "7a9941d34fc1497d8d0797429ecfd354",
"protocols" : "TLSv1.2",
"cipher" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-
GCM-SHA256:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-AES256-SHA384"
}, {
"project_id" : "7a9941d34fc1497d8d0797429ecfd354",
"protocols" : "TLSv1.3 TLSv1.2 TLSv1.1 TLSv1",
"cipher" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-ECDSA-AES256-
SHA:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-
GCM-SHA384:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-RSA-AES256-
SHA384:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:AES128-SHA:AES256-
SHA:TLS_AES_128_GCM_SHA256:TLS_AES_256_GCM_SHA384:TLS_CHACHA20_POLY1305_SHA256:TLS_AES_1
28_CCM_SHA256:TLS_AES_128_CCM_8_SHA256"
}, {
"project_id" : "7a9941d34fc1497d8d0797429ecfd354",
"protocols" : "TLSv1.3 TLSv1.2",
"cipher" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-
GCM-SHA256:ECDHE-RSA-AES128-SHA256:ECDHE-RSA-AES256-
SHA384:TLS_AES_128_GCM_SHA256:TLS_AES_256_GCM_SHA384:TLS_CHACHA20_POLY1305_SHA256:TLS_A
ES_128_CCM_SHA256:TLS_AES_128_CCM_8_SHA256"
}, {
"project_id" : "7a9941d34fc1497d8d0797429ecfd354",
"protocols" : "TLSv1.2 TLSv1.1",
"cipher" : "ECDHE-ECDSA-AES256-GCM-SHA384:ECDHE-ECDSA-AES128-GCM-SHA256:ECDHE-ECDSA-
AES128-SHA256:ECDHE-ECDSA-AES256-SHA384:ECDHE-ECDSA-AES128-SHA:ECDHE-ECDSA-AES256-
SHA:ECDHE-RSA-AES256-GCM-SHA384:ECDHE-RSA-AES128-GCM-SHA256:AES128-GCM-SHA256:AES256-
GCM-SHA384:ECDHE-RSA-AES128-SHA256:AES128-SHA256:AES256-SHA256:ECDHE-RSA-AES256-
SHA384:ECDHE-RSA-AES128-SHA:ECDHE-RSA-AES256-SHA:AES128-SHA:AES256-SHA"
}
}
}
```

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. The IP address can contain IP addresses or CIDR blocks, and 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 4-147 Path Parameters

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

Request Parameters

Table 4-148 Request header parameters

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

Table 4-149 Request body parameters

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

Table 4-150 CreatelpGroupOption

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

Table 4-151 CreatelpGroupIpOption

| Parameter | Mandatory | Type | Description |
|-------------|-----------|--------|--|
| ip | Yes | String | Specifies the IP addresses in the IP address group. Both IPv4 and IPv6 are supported. |
| description | No | String | Provides remarks about the IP address group. Minimum: 0 Maximum: 255 |

Response Parameters

Status code: 201

Table 4-152 Response body parameters

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

Table 4-153 IpGroup

| Parameter | Type | Description |
|-------------|-------------------------------------|---|
| created_at | String | Specifies the time when the IP address group was created. |
| description | String | Provides supplementary information about the IP address group. |
| id | String | Specifies the ID of 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. Array Length: 0 - 300 |
| listeners | Array of ListenerRef objects | Lists the IDs of listeners with which the IP address group is associated. |
| name | String | Specifies the IP address group name. |
| project_id | String | Specifies the project ID of the IP address group. |
| updated_at | String | Specifies the time when the IP address group was updated. |

Table 4-154 IpInfo

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

Table 4-155 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 4-156 Path Parameters

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

Table 4-157 Query Parameters

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

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

Request Parameters

Table 4-158 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 4-159 Response body parameters

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

Table 4-160 IpGroup

| Parameter | Type | Description |
|-------------|-------------------------------------|---|
| created_at | String | Specifies the time when the IP address group was created. |
| description | String | Provides supplementary information about the IP address group. |
| id | String | Specifies the ID of 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. Array Length: 0 - 300 |
| listeners | Array of ListenerRef objects | Lists the IDs of listeners with which the IP address group is associated. |
| name | String | Specifies the IP address group name. |
| project_id | String | Specifies the project ID of the IP address group. |
| updated_at | String | Specifies the time when the IP address group was updated. |

Table 4-161 IpInfo

| Parameter | Type | Description |
|-----------|--------|---|
| ip | String | Specifies the IP addresses in the IP address group. |

| Parameter | Type | Description |
|-------------|--------|--|
| description | String | Provides remarks about the IP address group. Minimum: 0 Maximum: 255 |

Table 4-162 ListenerRef

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the listener ID. |

Table 4-163 PageInfo

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

Example Requests

Querying IP address groups on each page

```
GET https://{ELB_Endpoint}/v3/45977fa2dbd7482098dd68d0d8970117/elb/ipgroups?limit=1
```

Example Responses

Status code: 200

Successful request.

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

```
"created_at" : "2018-01-16T03:19:16",
"updated_at" : "2018-01-16T03:19:16"
}],
"page_info" : {
  "previous_marker" : "1d321f77-bc7b-45d3-9cfe-d7c0b65a3620",
  "current_count" : 1
},
"request_id" : "8d9f423c-8766-4b6a-9952-275a88ac1ce3"
}
```

Status Codes

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

Error Codes

See [Error Codes](#).

4.7.3 Viewing Details of an IP Address Group

Function

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

Calling Method

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

URI

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

Table 4-164 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 4-165 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 4-166 Response body parameters

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

Table 4-167 IpGroup

| Parameter | Type | Description |
|-------------|-------------------------------------|---|
| created_at | String | Specifies the time when the IP address group was created. |
| description | String | Provides supplementary information about the IP address group. |
| id | String | Specifies the ID of 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. Array Length: 0 - 300 |
| listeners | Array of ListenerRef objects | Lists the IDs of listeners with which the IP address group is associated. |
| name | String | Specifies the IP address group name. |
| project_id | String | Specifies the project ID of the IP address group. |
| updated_at | String | Specifies the time when the IP address group was updated. |

Table 4-168 IpInfo

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

Table 4-169 ListenerRef

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the listener ID. |

Example Requests

Viewing details of an IP address group

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

Example Responses

Status code: 200

Successful request.

```
{  
  "ipgroup": {  
    "description": "",  
    "id": "8722e0e0-9cc9-4490-9660-8c9a5732fbb0",  
    "name": "test_ipg",  
    "project_id": "45977fa2dbd7482098dd68d0d8970117",  
    "ip_list": [{  
      "ip": "192.168.1.123",  
      "description": ""  
    }, {  
      "ip": "192.168.3.0/24",  
      "description": "test_ip"  
    }],  
    "listeners": [{  
      "id": "88f9c079-29cb-435a-b98f-0c5c0b90c2bd"  
    }, {  
      "id": "2f4c9644-d5d2-4cf8-a3c0-944239a4f58c"  
    }],  
    "created_at": "2018-01-16T03:19:16",  
    "updated_at": "2018-01-16T03:19:16"  
  }  
}
```


Status Codes

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

Error Codes

See [Error Codes](#).

4.7.4 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. The IP address can contain IP addresses or CIDR blocks, and 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 4-170 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 4-171 Request header parameters

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

Table 4-172 Request body parameters

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

Table 4-173 UpdateIpGroupOption

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

Table 4-174 UpdateIpGroupIpOption

| Parameter | Mandatory | Type | Description |
|-------------|-----------|--------|--|
| ip | Yes | String | Specifies the IP addresses in the IP address group. Both IPv4 and IPv6 are supported. If the IP address already exists, you can only update its description. |
| description | No | String | Provides remarks about the IP address group. Minimum: 0 Maximum: 255 |

Response Parameters

Status code: **200**

Table 4-175 Response body parameters

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

Table 4-176 IpGroup

| Parameter | Type | Description |
|-------------|-------------------------------------|---|
| created_at | String | Specifies the time when the IP address group was created. |
| description | String | Provides supplementary information about the IP address group. |
| id | String | Specifies the ID of 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. Array Length: 0 - 300 |
| listeners | Array of ListenerRef objects | Lists the IDs of listeners with which the IP address group is associated. |
| name | String | Specifies the IP address group name. |
| project_id | String | Specifies the project ID of the IP address group. |
| updated_at | String | Specifies the time when the IP address group was updated. |

Table 4-177 IpInfo

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

Table 4-178 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 4-179 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 4-180 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 add IP addresses to an IP address group or update the descriptions of the existing IP addresses.

Calling Method

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

URI

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

Table 4-181 Path Parameters

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

Request Parameters

Table 4-182 Request header parameters

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

Table 4-183 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 4-184 UpdateIpListOption

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

Table 4-185 UpdateIpGroupOption

| Parameter | Mandatory | Type | Description |
|-------------|-----------|--------|--|
| ip | Yes | String | Specifies the IP addresses in the IP address group. Both IPv4 and IPv6 are supported. If the IP address already exists, you can only update its description. |
| description | No | String | Provides remarks about the IP address group. Minimum: 0 Maximum: 255 |

Response Parameters

Status code: 200

Table 4-186 Response body parameters

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

Table 4-187 IpGroup

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

Table 4-188 IpInfo

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

Table 4-189 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 4-190 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 4-191 Request header parameters

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

Table 4-192 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 4-193 BatchDeleteIpListOption

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

Table 4-194 IpGroupIp

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

Response Parameters

Status code: 200

Table 4-195 Response body parameters

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

Table 4-196 IpGroup

| Parameter | Type | Description |
|-------------|--------|--|
| created_at | String | Specifies the time when the IP address group was created. |
| description | String | Provides supplementary information about the IP address group. |

| Parameter | Type | Description |
|------------|--|---|
| id | String | Specifies the ID of 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. Array Length: 0 - 300 |
| listeners | Array of ListenerRef objects | Lists the IDs of listeners with which the IP address group is associated. |
| name | String | Specifies the IP address group name. |
| project_id | String | Specifies the project ID of the IP address group. |
| updated_at | String | Specifies the time when the IP address group was updated. |

Table 4-197 IpInfo

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

Table 4-198 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

The protocol used by the listener can be TCP, UDP, HTTP, or HTTPS.

- For load balancing at Layer 4, the protocol can only be TCP or UDP.
- For load balancing at Layer 7, the protocol can only be HTTP, HTTPS or QUIC.
- For load balancing both at Layer 4 and Layer 7, TCP, UDP, HTTP, HTTPS and QUIC are supported.

Calling Method

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

URI

POST /v3/{project_id}/elb/listeners

Table 4-199 Path Parameters

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

Request Parameters

Table 4-200 Request header parameters

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

Table 4-201 Request body parameters

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

Table 4-202 CreateListenerOption

| Parameter | Mandatory | Type | Description |
|----------------|-----------|---------|--|
| admin_state_up | No | Boolean | Specifies the administrative status of the listener. The value can only be true . This parameter is unsupported. Please do not use it. |

| Parameter | Mandatory | Type | Description |
|-----------------------------|-----------|--------|---|
| default_pool_id | No | String | Specifies the ID of the default backend server group. If there is no matched forwarding policy, requests will be forwarded to the default backend server for processing. Minimum: 1 Maximum: 36 |
| client_ca_tls_container_ref | No | String | Specifies the ID of the CA certificate used by the listener. This parameter is available only when type is set to client . Minimum: 1 Maximum: 128 |
| default_tls_container_ref | No | String | Specifies the ID of the server certificate used by the listener. This parameter is available only when the listener's protocol is HTTPS and type is set to server . Minimum: 1 Maximum: 128 |
| description | No | String | Provides supplementary information about the listener. Minimum: 0 Maximum: 255 |

| Parameter | Mandatory | Type | Description |
|-----------------|-----------|--|--|
| http2_enable | No | Boolean | Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the listener. However, connections between the load balancer and backend servers still use HTTP/1.x by default. Note: <ul style="list-style-type: none">• This parameter is available only for HTTPS listeners.• You cannot configure this parameter for QUIC listeners, and the fixed value is true.• If you configure this parameter for listeners with other protocols, it will not take effect. |
| insert_headers | No | ListenerInsertHeaders object | Specifies the HTTP header fields that can transmit required information to backend servers. For example, the X-Forwarded-ELB-IP header field can transmit the EIP of the load balancer to backend servers. |
| loadbalancer_id | Yes | String | Specifies the ID of the load balancer that the listener is added to. Note: A listener can be added to only one load balancer. Minimum: 1 Maximum: 36 |
| name | No | String | Specifies the listener name. Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details. Minimum: 0 Maximum: 255 |
| project_id | No | String | Specifies the project ID. Minimum: 1 Maximum: 32 |

| Parameter | Mandatory | Type | Description |
|---------------|-----------|---------|--|
| protocol | Yes | String | <p>Specifies the protocol used by the listener.</p> <p>The value can be TCP, HTTP, UDP, HTTPS, TERMINATED_HTTPS or QUIC.</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 | No | Integer | <p>Specifies the port used by the listener. The QUIC listener port cannot be 4789 or the same as the UDP listener port. If this parameter is set to 0, port_ranges is required.</p> <p>Minimum: 0 Maximum: 65535</p> |

| Parameter | Mandatory | Type | Description |
|--------------------|-----------|-----------------------------|--|
| sni_container_refs | No | 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. QUIC listeners support only RSA certificates. <p>Array Length: 0 - 50</p> |
| sni_match_algo | No | String | <p>Specifies how wildcard domain name matches with the SNI certificates used by the listener.</p> <p>longest_suffix indicates longest suffix match. wildcard indicates wildcard match.</p> <p>The default value is wildcard.</p> |
| tags | No | Array of Tag objects | Lists the tags. |
| tls_ciphers_policy | No | String | Specifies the security policy used by the listener. |
| security_policy_id | No | String | <p>Specifies the ID of the custom security policy.</p> <p>Minimum: 1</p> <p>Maximum: 36</p> |

| Parameter | Mandatory | Type | Description |
|---------------------|-----------|---------|---|
| enable_member_retry | No | Boolean | <p>Specifies whether to enable health check retries for backend servers. The value can be true (enable health check retries) or false (disable health check retries). The default value is true. 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> <ul style="list-style-type: none">• For TCP listeners, the value ranges from 10 to 4000, and the default value is 300.• For HTTP and HTTPS listeners, the value ranges from 1 to 4000, and the default value is 60.• For UDP listeners of shared load balancers, this parameter does not take effect. |

| Parameter | Mandatory | Type | Description |
|----------------|-----------|--|--|
| client_timeout | No | Integer | <p>Specifies the timeout duration for waiting for a response from a client, in seconds. There are two situations:</p> <ul style="list-style-type: none"> • If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted. • If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected. <p>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p> <p>Minimum: 1 Maximum: 300 Default: 60</p> |
| member_timeout | No | Integer | <p>Specifies the timeout duration for waiting for a response from a backend server, in seconds. If the backend server fails to respond after the timeout duration elapses, the load balancer will stop waiting and return HTTP 504 Gateway Timeout to the client.</p> <p>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p> <p>Minimum: 1 Maximum: 300 Default: 60</p> |
| ipgroup | No | CreateListenerIpGroupOption object | Specifies the IP address group associated with the listener. |

| Parameter | Mandatory | Type | Description |
|------------------------------|-----------|---------|--|
| transparent_client_ip_enable | No | Boolean | Specifies whether to pass source IP addresses of the clients to backend servers. |
| proxy_protocol_enable | No | Boolean | Specifies whether to enable the ProxyProtocol option to pass the source IP addresses of the clients to backend servers. This parameter is available only for TCPSSL listeners and does not take effect for other types of listeners. |

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

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

Table 4-203 ListenerInsertHeaders

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

| Parameter | Mandatory | Type | Description |
|--------------------------------|-----------|---------|--|
| 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. |
| 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. |

| Parameter | Mandatory | Type | Description |
|------------------------|-----------|---------|--|
| 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 4-204 Tag

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

Table 4-205 CreateListenerIpGroupOption

| Parameter | Mandatory | Type | Description |
|----------------|-----------|---------|---|
| ipgroup_id | Yes | String | Specifies the ID of the IP address group associated with the listener. <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. Minimum: 1 Maximum: 36 |
| enable_ipgroup | No | Boolean | Specifies whether to enable access control. <ul style="list-style-type: none"> true (default): Access control will be enabled. false: Access control will be disabled. |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| type | No | String | Specifies how access to the listener is controlled. <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 4-206 CreateListenerQuicConfigOption

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

Response Parameters

Status code: 201

Table 4-207 Response body parameters

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

Table 4-208 Listener

| Parameter | Type | Description |
|-----------------------------|---------|--|
| admin_state_up | Boolean | Specifies the administrative status of the listener. The value can only be true . This parameter is unsupported. Please do not use it. |
| client_ca_tls_container_ref | String | Specifies the ID of the CA certificate used by the listener. This parameter is available only when type is set to client . |
| connection_limit | Integer | Specifies the maximum number of connections that the load balancer can establish with backend servers. The value -1 indicates that the number of connections is not limited. This parameter is unsupported. Please do not use it. |
| created_at | String | Specifies the time when the listener was created, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> , for example, 2021-07-30T12:03:44Z. |
| default_pool_id | String | Specifies the ID of the default backend server group. If there is no matched forwarding policy, requests are forwarded to the default backend server. |
| default_tls_container_ref | String | Specifies the ID of the server certificate used by the listener. |
| description | String | Provides supplementary information about the listener. |
| http2_enable | Boolean | Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the listener. However, connections between the load balancer and backend servers still use HTTP/1.x by default. Note: <ul style="list-style-type: none">• This parameter is available only for HTTPS listeners.• You cannot configure this parameter for QUIC listeners, and the fixed value is true.• If you configure this parameter for listeners with other protocols, it will not take effect. |
| id | String | Specifies the listener ID. |

| Parameter | Type | Description |
|--------------------|--|--|
| insert_headers | ListenerInsertHeaders object | Specifies the HTTP header fields that can transmit required information to backend servers. For example, the X-Forwarded-ELB-IP header field can transmit the EIP of the load balancer to backend servers. |
| loadbalancers | Array of LoadBalancerRef objects | Specifies the ID of the load balancer that the listener is added to. A listener can be added to only one load balancer. |
| name | String | Specifies the listener name. Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details. |
| project_id | String | Specifies the ID of the project where the listener is used. |
| protocol | String | Specifies the protocol used by the listener. The value can be TCP , HTTP , UDP , HTTPS , TERMINATED_HTTPS , QUIC , or TCPSSL . 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. The QUIC listener port cannot be 4789 or the same as the UDP listener port. If this parameter is set to 0 , port_ranges is required. Minimum: 0 Maximum: 65535 |
| sni_container_refs | Array of strings | Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener. Note: <ul style="list-style-type: none">• The domain names of all SNI certificates must be unique.• The total number of domain names of all SNI certificates cannot exceed 50. |

| Parameter | Type | Description |
|---------------------|-----------------------------|--|
| sni_match_algo | String | Specifies how wildcard domain name matches with the SNI certificates used by the listener. longest_suffix indicates longest suffix match. wildcard indicates wildcard match. The default value is wildcard . |
| tags | Array of Tag objects | Lists the tags. |
| updated_at | String | Specifies the time when the listener was updated, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> , for example, 2021-07-30T12:03:44Z. |
| tls_ciphers_policy | String | Specifies the security policy used by the listener. |
| security_policy_id | String | Specifies the ID of the custom security policy. |
| enable_member_retry | Boolean | Specifies whether to enable health check retries for backend servers. The value can be true (enable health check retries) or false (disable health check retries). The default value is true . Note: <ul style="list-style-type: none">• 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 | 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. <ul style="list-style-type: none">• For TCP listeners, the value ranges from 10 to 4000, and the default value is 300.• For HTTP and HTTPS listeners, the value ranges from 1 to 4000, and the default value is 60.• For UDP listeners of shared load balancers, this parameter does not take effect. |

| Parameter | Type | Description |
|------------------------------|--|---|
| client_timeout | Integer | <p>Specifies the timeout duration for waiting for a response from a client, in seconds. There are two situations:</p> <ul style="list-style-type: none">• If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted.• If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected. <p>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p> |
| member_timeout | Integer | <p>Specifies the timeout duration for waiting for a response from a backend server, in seconds. If the backend server fails to respond after the timeout duration elapses, the load balancer will stop waiting and return HTTP 504 Gateway Timeout to the client.</p> <p>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p> |
| ipgroup | ListenerIpGroup object | <p>Specifies the IP address group associated with the listener.</p> |
| transparent_client_ip_enable | Boolean | <p>Specifies whether to pass source IP addresses of the clients to backend servers.</p> |
| proxy_protocol_enable | Boolean | <p>Specifies whether to enable the ProxyProtocol option to pass the source IP addresses of the clients to backend servers. This parameter is available only for TCPSSL 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. The value can be true (enable advanced forwarding) or false (disable advanced forwarding), and the default value is false.</p> <p>The following scenarios are supported:</p> <ul style="list-style-type: none"> • action can be set to REDIRECT_TO_URL (requests will be redirected to another URL) or Fixed_RESPONSE (a fixed response body will be returned to clients). • Parameters priority, redirect_url_config, and fixed_response_config can be specified in a forwarding policy. • Parameter type can be set to METHOD, HEADER, QUERY_STRING, or SOURCE_IP for a forwarding rule. • If type is set to HOST_NAME for a forwarding rule, the value parameter of the forwarding rule supports wildcard asterisks (*). • The conditions parameter can be specified for forwarding rules. <p>Default: false</p> |
| quic_config | ListenerQuicConfig object | <p>Specifies the QUIC configuration for the current listener. This parameter is valid only when protocol is set to HTTPS.</p> <p>For TCP, UDP, HTTP, QUIC listeners, if this parameter is not left blank, an error will be reported.</p> <p>NOTE The client sends a normal HTTP request that contains information indicating that the QUIC protocol is supported.</p> <p>If QUIC upgrade is enabled for the listeners, QUIC port and version information will be added to the response header.</p> <p>When the client sends both HTTPS and QUIC requests to the server, if the QUIC request is successfully sent, QUIC protocol will be used for subsequent communications.</p> |

Table 4-209 ListenerInsertHeaders

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

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

Table 4-210 LoadBalancerRef

| Parameter | Type | Description |
|-----------|--------|---------------------------------|
| id | String | Specifies the load balancer ID. |

Table 4-211 Tag

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

Table 4-212 ListenerIpGroup

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

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

Table 4-213 ListenerQuicConfig

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

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-1-0",
    "tags" : [ ],
    "created_at" : "2019-04-02T00:12:32Z",
    "updated_at" : "2019-04-02T00:12:32Z",
    "http2_enable" : false,
    "enable_member_retry" : true,
    "insert_headers" : {
      "X-Forwarded-ELB-IP" : true
    },
    "transparent_client_ip_enable" : false
  },
  "request_id" : "f4c4aca8-df16-42e8-8836-33e4b8e9aa8e"
}
```

Status Codes

| Status Code | Description |
|-------------|-----------------------------------|
| 201 | Normal response to POST requests. |

Error Codes

See [Error Codes](#).

4.8.2 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 4-214 Path Parameters

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

Table 4-215 Query Parameters

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

| Parameter | Mandatory | Type | Description |
|---------------------------|-----------|---------|---|
| page_reverse | No | Boolean | <p>Specifies whether to use reverse query. Values:</p> <ul style="list-style-type: none"> • true: Query the previous page. • false (default): Query the next page. <p>Note:</p> <ul style="list-style-type: none"> • This parameter must be used together with limit. • If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker. |
| protocol_port | No | Array | <p>Specifies the port used by the listener.</p> <p>Multiple ports can be queried in the format of <i>protocol_port=xxx&protocol_port=xxx</i>.</p> |
| protocol | No | Array | <p>Specifies the protocol used by the listener. The value can be TCP, HTTP, UDP, HTTPS, TERMINATED_HTTPS, or QUIC. Note: TERMINATED_HTTPS is only available for the listeners of shared load balancers.</p> <p>Multiple protocols can be queried in the format of <i>protocol=xxx&protocol=xxx</i>.</p> |
| description | No | Array | <p>Provides supplementary information about the listener.</p> <p>Multiple descriptions can be queried in the format of <i>description=xxx&description=xxx</i>.</p> |
| default_tls_container_ref | No | Array | <p>Specifies the ID of the server certificate used by the listener.</p> <p>Multiple IDs can be queried in the format of <i>default_tls_container_ref=xxx&default_tls_container_ref=xxx</i>.</p> |

| Parameter | Mandatory | Type | Description |
|-----------------------------|-----------|---------|---|
| client_ca_tls_container_ref | No | Array | Specifies the ID of the CA certificate used by the listener. Multiple IDs can be queried in the format of <i>client_ca_tls_container_ref=xxx&client_ca_tls_container_ref=xx</i> . |
| admin_state_up | No | Boolean | Specifies the administrative status of the listener. The value can only be true . This parameter is unsupported. Please do not use it. |
| connection_limit | No | Array | Specifies the maximum number of connections that the load balancer can establish with backend servers. The value -1 indicates that the number of connections is not limited. Multiple values can be queried in the format of <i>connection_limit=xxx&connection_limit=xxx</i> . This parameter is unsupported. Please do not use it. |
| default_pool_id | No | Array | Specifies the ID of the default backend server group. If there is no matched forwarding policy, requests will be routed to the default backend server. Multiple IDs can be queried in the format of <i>default_pool_id=xxx&default_pool_id=xxx</i> . |
| id | No | Array | Specifies the listener ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> . |
| name | No | Array | Specifies the name of the listener added to the load balancer. Multiple names can be queried in the format of <i>name=xxx&name=xxx</i> . |

| Parameter | Mandatory | Type | Description |
|--------------------|-----------|---------|--|
| http2_enable | No | Boolean | Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the listener. However, connections between the load balancer and backend servers still use HTTP/1.x by default. Note: <ul style="list-style-type: none">• This parameter is available only for HTTPS listeners.• You cannot configure this parameter for QUIC listeners, and the fixed value is true.• If you configure this parameter for listeners with other protocols, it will not take effect. |
| loadbalancer_id | No | Array | Specifies the ID of the load balancer that the listener is added to. Multiple IDs can be queried in the format of <i>loadbalancer_id=xxx&loadbalancer_id=xxx</i> . |
| tls_ciphers_policy | No | Array | Specifies the security policy used by the listener. Multiple security policies can be queried in the format of <i>tls_ciphers_policy=xxx&tls_ciphers_policy=xxx</i> . |
| member_address | No | Array | Specifies the private IP address bound to the backend server. This parameter is used only as a query condition and is not included in the response. Multiple IP addresses can be queried in the format of <i>member_address=xxx&member_address=xxx</i> . |

| Parameter | Mandatory | Type | Description |
|-----------------------|-----------|---------|---|
| member_device_id | No | Array | <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 | <p>Specifies the enterprise project ID.</p> <ul style="list-style-type: none">• If this parameter is not passed, resources in the default enterprise project are queried, and authentication is performed based on the default enterprise project.• If this parameter is passed, its value can be the ID of an existing enterprise project (resources in the specific enterprise project are required) or all_granted_eps (resources in all enterprise projects are queried). <p>Multiple IDs can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p> |
| 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 | <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 | <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 | <p>Specifies the idle timeout duration, in seconds. If there are no requests reaching the load balancer after the idle timeout duration elapses, the load balancer will disconnect the connection with the client and establish a new connection when there is a new request.</p> <ul style="list-style-type: none">• For TCP listeners, the value ranges from 10 to 4000.• For HTTP, HTTPS, and TERMINATED_HTTPS listeners, the value ranges from 1 to 4000.• For UDP listeners of shared load balancers, this parameter does not take effect. <p>Multiple durations can be queried in the format of <i>keepalive_timeout=xxx&keepalive_timeout=xxx</i>.</p> |
| transparent_client_ip_enable | No | Boolean | <p>Specifies whether to pass source IP addresses of the clients to backend servers.</p> <p>This parameter is only available for TCP or UDP listeners of shared load balancers.</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.</p> <p>This parameter is available only for TCPSSL 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 | Specifies the backend server ID. This parameter is used only as a query condition and is not included in the response. Multiple IDs can be queried in the format of <i>member_instance_id=xxx&member_instance_id=xxx</i> . |

Request Parameters

Table 4-216 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 4-217 Response body parameters

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

Table 4-218 PageInfo

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

Table 4-219 Listener

| Parameter | Type | Description |
|-----------------------------|---------|---|
| admin_state_up | Boolean | Specifies the administrative status of the listener. The value can only be true . This parameter is unsupported. Please do not use it. |
| client_ca_tls_container_ref | String | Specifies the ID of the CA certificate used by the listener. This parameter is available only when type is set to client . |
| connection_limit | Integer | Specifies the maximum number of connections that the load balancer can establish with backend servers. The value -1 indicates that the number of connections is not limited. This parameter is unsupported. Please do not use it. |
| created_at | String | Specifies the time when the listener was created, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> , for example, 2021-07-30T12:03:44Z. |
| default_pool_id | String | Specifies the ID of the default backend server group. If there is no matched forwarding policy, requests are forwarded to the default backend server. |
| default_tls_container_ref | String | Specifies the ID of the server certificate used by the listener. |
| description | String | Provides supplementary information about the listener. |

| Parameter | Type | Description |
|----------------|--|---|
| http2_enable | Boolean | Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the listener. However, connections between the load balancer and backend servers still use HTTP/1.x by default. Note: <ul style="list-style-type: none">• This parameter is available only for HTTPS listeners.• You cannot configure this parameter for QUIC listeners, and the fixed value is true.• If you configure this parameter for listeners with other protocols, it will not take effect. |
| id | String | Specifies the listener ID. |
| insert_headers | ListenerInsertHeaders object | Specifies the HTTP header fields that can transmit required information to backend servers. For example, the X-Forwarded-ELB-IP header field can transmit the EIP of the load balancer to backend servers. |
| loadbalancers | Array of LoadBalancerRef objects | Specifies the ID of the load balancer that the listener is added to. A listener can be added to only one load balancer. |
| name | String | Specifies the listener name. Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details. |
| project_id | String | Specifies the ID of the project where the listener is used. |
| protocol | String | Specifies the protocol used by the listener. The value can be TCP , HTTP , UDP , HTTPS , TERMINATED_HTTPS , QUIC , or TCPSSL . 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. |

| Parameter | Type | Description |
|---------------------|-----------------------------|---|
| protocol_port | Integer | Specifies the port used by the listener. The QUIC listener port cannot be 4789 or the same as the UDP listener port. If this parameter is set to 0 , port_ranges is required. Minimum: 0 Maximum: 65535 |
| sni_container_refs | Array of strings | Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener. Note: <ul style="list-style-type: none">• The domain names of all SNI certificates must be unique.• The total number of domain names of all SNI certificates cannot exceed 50. |
| sni_match_algo | String | Specifies how wildcard domain name matches with the SNI certificates used by the listener. longest_suffix indicates longest suffix match. wildcard indicates wildcard match. The default value is wildcard . |
| tags | Array of Tag objects | Lists the tags. |
| updated_at | String | Specifies the time when the listener was updated, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> , for example, 2021-07-30T12:03:44Z. |
| tls_ciphers_policy | String | Specifies the security policy used by the listener. |
| security_policy_id | String | Specifies the ID of the custom security policy. |
| enable_member_retry | Boolean | Specifies whether to enable health check retries for backend servers. The value can be true (enable health check retries) or false (disable health check retries). The default value is true . Note: <ul style="list-style-type: none">• 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> <ul style="list-style-type: none">• For TCP listeners, the value ranges from 10 to 4000, and the default value is 300.• For HTTP and HTTPS listeners, the value ranges from 1 to 4000, and the default value is 60.• For UDP listeners of shared load balancers, this parameter does not take effect. |
| client_timeout | Integer | <p>Specifies the timeout duration for waiting for a response from a client, in seconds. There are two situations:</p> <ul style="list-style-type: none">• If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted.• If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected. <p>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p> |
| member_timeout | Integer | <p>Specifies the timeout duration for waiting for a response from a backend server, in seconds. If the backend server fails to respond after the timeout duration elapses, the load balancer will stop waiting and return HTTP 504 Gateway Timeout to the client.</p> <p>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p> |
| ipgroup | ListenerIpGroup object | Specifies the IP address group associated with the listener. |
| transparent_client_ip_enable | Boolean | Specifies whether to pass source IP addresses of the clients to backend servers. |

| Parameter | Type | Description |
|-------------------------|---------|--|
| proxy_protocol_enable | Boolean | Specifies whether to enable the ProxyProtocol option to pass the source IP addresses of the clients to backend servers. This parameter is available only for TCPSSL listeners and does not take effect for other types of listeners. |
| enhance_l7policy_enable | Boolean | <p>Specifies whether to enable advanced forwarding. If advanced forwarding is enabled, more flexible forwarding policies and rules are supported. The value can be true (enable advanced forwarding) or false (disable advanced forwarding), and the default value is false.</p> <p>The following scenarios are supported:</p> <ul style="list-style-type: none">• action can be set to REDIRECT_TO_URL (requests will be redirected to another URL) or Fixed_RESPONSE (a fixed response body will be returned to clients).• Parameters priority, redirect_url_config, and fixed_response_config can be specified in a forwarding policy.• Parameter type can be set to METHOD, HEADER, QUERY_STRING, or SOURCE_IP for a forwarding rule.• If type is set to HOST_NAME for a forwarding rule, the value parameter of the forwarding rule supports wildcard asterisks (*).• The conditions parameter can be specified for forwarding rules. <p>Default: false</p> |

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

Table 4-220 ListenerInsertHeaders

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

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

Table 4-221 LoadBalancerRef

| Parameter | Type | Description |
|-----------|--------|---------------------------------|
| id | String | Specifies the load balancer ID. |

Table 4-222 Tag

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

Table 4-223 ListenerIpGroup

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

Table 4-224 ListenerQuicConfig

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

Example Requests

Queries the listeners on each page

```
GET https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/listeners?limit=2&marker=0r31747a-b139-492f-2749-2df0b1c87193
```

Example Responses

Status code: 200

Successful request.

```
{
  "listeners": [ {
    "id": "0b11747a-b139-492f-9692-2df0b1c87193",
    "name": "My listener",
    "protocol_port": 80,
    "protocol": "TCP",
    "ipgroup": null,
    "description": "My listener update.",
    "default_tls_container_ref": null,
    "admin_state_up": true,
    "loadbalancers": [ {
      "id": "098b2f68-af1c-41a9-8efd-69958722af62"
    } ],
    "member_timeout": null,
    "client_timeout": null,
    "keepalive_timeout": 300,
    "client_ca_tls_container_ref": null,
    "project_id": "99a3fff0d03c428eac3678da6a7d0f24",
    "sni_container_refs": [ ],
    "connection_limit": -1,
    "default_pool_id": null,
    "tls_ciphers_policy": "tls-1-0",
    "tags": [ ],
    "created_at": "2019-04-02T00:12:32Z",
    "updated_at": "2019-04-02T17:43:46Z",
    "http2_enable": true,
    "insert_headers": {
      "X-Forwarded-ELB-IP": true
    },
    "transparent_client_ip_enable": false,
    "quic_config": null
  }, {
    "id": "0b455839-3ea7-4bac-ad26-35bf22f96ea4",
    "name": "listener-test",
    "protocol_port": 86,
    "protocol": "TERMINATED_HTTPS",
    "description": null,
    "default_tls_container_ref": "ad9b123e858d4652b80e89b9941e49a4",
    "admin_state_up": true,
    "loadbalancers": [ {
      "id": "309a0f61-0b62-45f2-97d1-742f3434338e"
    } ],
    "member_timeout": 60,
    "client_timeout": 60,
    "keepalive_timeout": 15,
    "client_ca_tls_container_ref": "7875ccb4c6b44cdb90ab2ab89892ab71",
    "project_id": "99a3fff0d03c428eac3678da6a7d0f24",
    "sni_container_refs": [ "7f41c96223d34ebaa3c8e836b6625ec0" ],
    "connection_limit": -1,
    "default_pool_id": "5e7e0175-d5d5-4f37-bfba-88a9524ad20b",
    "tls_ciphers_policy": "tls-1-0",
    "tags": [ ],
    "created_at": "2019-03-22T23:37:14Z",
    "updated_at": "2019-03-22T23:37:14Z",
    "http2_enable": false,
    "ipgroup": null,
    "insert_headers": {
      "X-Forwarded-ELB-IP": true
    },
    "transparent_client_ip_enable": false,
    "quic_config": null
  } ],
  "page_info": {
```

```
"next_marker" : "0b455839-3ea7-4bac-ad26-35bf22f96ea4",
"previous_marker" : "0b11747a-b139-492f-9692-2df0b1c87193",
"current_count" : 2
},
"request_id" : "774640ee-6863-4de3-8156-aff16f51a087"
}
```

Status Codes

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

Error Codes

See [Error Codes](#).

4.8.3 Viewing Details of a Listener

Function

This API is used to view details of a listener.

Calling Method

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

URI

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

Table 4-225 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 4-226 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 4-227 Response body parameters

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

Table 4-228 Listener

| Parameter | Type | Description |
|-----------------------------|---------|---|
| admin_state_up | Boolean | Specifies the administrative status of the listener. The value can only be true . This parameter is unsupported. Please do not use it. |
| client_ca_tls_container_ref | String | Specifies the ID of the CA certificate used by the listener. This parameter is available only when type is set to client . |
| connection_limit | Integer | Specifies the maximum number of connections that the load balancer can establish with backend servers. The value -1 indicates that the number of connections is not limited. This parameter is unsupported. Please do not use it. |
| created_at | String | Specifies the time when the listener was created, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> , for example, 2021-07-30T12:03:44Z. |
| default_pool_id | String | Specifies the ID of the default backend server group. If there is no matched forwarding policy, requests are forwarded to the default backend server. |
| default_tls_container_ref | String | Specifies the ID of the server certificate used by the listener. |
| description | String | Provides supplementary information about the listener. |

| Parameter | Type | Description |
|----------------|--|---|
| http2_enable | Boolean | Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the listener. However, connections between the load balancer and backend servers still use HTTP/1.x by default. Note: <ul style="list-style-type: none"> This parameter is available only for HTTPS listeners. You cannot configure this parameter for QUIC listeners, and the fixed value is true. If you configure this parameter for listeners with other protocols, it will not take effect. |
| id | String | Specifies the listener ID. |
| insert_headers | ListenerInsertHeaders object | Specifies the HTTP header fields that can transmit required information to backend servers. For example, the X-Forwarded-ELB-IP header field can transmit the EIP of the load balancer to backend servers. |
| loadbalancers | Array of LoadBalancerRef objects | Specifies the ID of the load balancer that the listener is added to. A listener can be added to only one load balancer. |
| name | String | Specifies the listener name. Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details. |
| project_id | String | Specifies the ID of the project where the listener is used. |
| protocol | String | Specifies the protocol used by the listener. The value can be TCP , HTTP , UDP , HTTPS , TERMINATED_HTTPS , QUIC , or TCPSSL . 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. |

| Parameter | Type | Description |
|---------------------|-----------------------------|---|
| protocol_port | Integer | Specifies the port used by the listener. The QUIC listener port cannot be 4789 or the same as the UDP listener port. If this parameter is set to 0 , port_ranges is required. Minimum: 0 Maximum: 65535 |
| sni_container_refs | Array of strings | Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener. Note: <ul style="list-style-type: none">• The domain names of all SNI certificates must be unique.• The total number of domain names of all SNI certificates cannot exceed 50. |
| sni_match_algo | String | Specifies how wildcard domain name matches with the SNI certificates used by the listener. longest_suffix indicates longest suffix match. wildcard indicates wildcard match. The default value is wildcard . |
| tags | Array of Tag objects | Lists the tags. |
| updated_at | String | Specifies the time when the listener was updated, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> , for example, 2021-07-30T12:03:44Z. |
| tls_ciphers_policy | String | Specifies the security policy used by the listener. |
| security_policy_id | String | Specifies the ID of the custom security policy. |
| enable_member_retry | Boolean | Specifies whether to enable health check retries for backend servers. The value can be true (enable health check retries) or false (disable health check retries). The default value is true . Note: <ul style="list-style-type: none">• 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> <ul style="list-style-type: none">For TCP listeners, the value ranges from 10 to 4000, and the default value is 300.For HTTP and HTTPS listeners, the value ranges from 1 to 4000, and the default value is 60.For UDP listeners of shared load balancers, this parameter does not take effect. |
| client_timeout | Integer | <p>Specifies the timeout duration for waiting for a response from a client, in seconds. There are two situations:</p> <ul style="list-style-type: none">If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted.If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected. <p>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p> |
| member_timeout | Integer | <p>Specifies the timeout duration for waiting for a response from a backend server, in seconds. If the backend server fails to respond after the timeout duration elapses, the load balancer will stop waiting and return HTTP 504 Gateway Timeout to the client.</p> <p>The value ranges from 1 to 300, and the default value is 60.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p> |
| ipgroup | ListenerIpGroup object | Specifies the IP address group associated with the listener. |
| transparent_client_ip_enable | Boolean | Specifies whether to pass source IP addresses of the clients to backend servers. |

| Parameter | Type | Description |
|-------------------------|---------|--|
| proxy_protocol_enable | Boolean | Specifies whether to enable the ProxyProtocol option to pass the source IP addresses of the clients to backend servers. This parameter is available only for TCPSSL listeners and does not take effect for other types of listeners. |
| enhance_l7policy_enable | Boolean | <p>Specifies whether to enable advanced forwarding. If advanced forwarding is enabled, more flexible forwarding policies and rules are supported. The value can be true (enable advanced forwarding) or false (disable advanced forwarding), and the default value is false.</p> <p>The following scenarios are supported:</p> <ul style="list-style-type: none">• action can be set to REDIRECT_TO_URL (requests will be redirected to another URL) or Fixed_RESPONSE (a fixed response body will be returned to clients).• Parameters priority, redirect_url_config, and fixed_response_config can be specified in a forwarding policy.• Parameter type can be set to METHOD, HEADER, QUERY_STRING, or SOURCE_IP for a forwarding rule.• If type is set to HOST_NAME for a forwarding rule, the value parameter of the forwarding rule supports wildcard asterisks (*).• The conditions parameter can be specified for forwarding rules. <p>Default: false</p> |

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

Table 4-229 ListenerInsertHeaders

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

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

Table 4-230 LoadBalancerRef

| Parameter | Type | Description |
|-----------|--------|---------------------------------|
| id | String | Specifies the load balancer ID. |

Table 4-231 Tag

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

Table 4-232 ListenerIpGroup

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

Table 4-233 ListenerQuicConfig

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

Example Requests

Viewing details of a listener

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

Example Responses

Status code: 200

Successful request.

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

Status Codes

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

Error Codes

See [Error Codes](#).

4.8.4 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 4-234 Path Parameters

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

Request Parameters

Table 4-235 Request header parameters

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

Table 4-236 Request body parameters

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

Table 4-237 UpdateListenerOption

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

| 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 listener. However, connections between the load balancer and backend servers still use HTTP/1.x by default. Note:</p> <ul style="list-style-type: none"> • This parameter is available only for HTTPS listeners. • You cannot configure this parameter for QUIC listeners, and the fixed value is true. • If you configure this parameter for listeners with other protocols, it will not take effect. |
| 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 whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the listener. However, connections between the load balancer and backend servers still use HTTP/1.x by default. Note:</p> <ul style="list-style-type: none"> • This parameter is available only for HTTPS listeners. • You cannot configure this parameter for QUIC listeners, and the fixed value is true. • If you configure this parameter for listeners with other protocols, it will not take effect. <p>Minimum: 0 Maximum: 255</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. longest_suffix indicates longest suffix match. wildcard indicates wildcard match. The default value is wildcard . |
| tls_ciphers_policy | No | String | Specifies the security policy used by the listener. |
| security_policy_id | No | String | Specifies the ID of the custom security policy. Minimum: 1 Maximum: 36 |
| enable_member_retry | No | Boolean | Specifies whether to enable health check retries for backend servers. The value can be true (enable health check retries) or false (disable health check retries). The default value is true . 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 | Mandatory | Type | Description |
|-------------------|-----------|---------|--|
| member_timeout | No | Integer | <p>Specifies the timeout duration for waiting for a response from a backend server, in seconds. If the backend server fails to respond after the timeout duration elapses, the load balancer will stop waiting and return HTTP 504 Gateway Timeout to the client.</p> <p>The value ranges from 1 to 300.</p> <p>This parameter is available only for HTTP and HTTPS listeners.</p> <p>Minimum: 1 Maximum: 300</p> |
| client_timeout | No | Integer | <p>Specifies the timeout duration for waiting for a response from a client, in seconds.</p> <p>This parameter is available only for HTTP and HTTPS listeners. The value ranges from 1 to 300.</p> <p>Minimum: 1 Maximum: 300</p> |
| keepalive_timeout | No | Integer | <p>Specifies the idle timeout duration, in seconds. If there are no requests reaching the load balancer after the idle timeout duration elapses, the load balancer will disconnect the connection with the client and establish a new connection when there is a new request.</p> <ul style="list-style-type: none">• For TCP listeners, the value ranges from 10 to 4000.• For HTTP and HTTPS listeners, the value ranges from 1 to 4000.• For UDP listeners of shared load balancers, this parameter does not take effect. |

| Parameter | Mandatory | Type | Description |
|------------------------------|-----------|--|--|
| ipgroup | No | UpdateListenerIpGroupOption object | Specifies the IP address group associated with the listener. |
| transparent_client_ip_enable | No | Boolean | Specifies whether to pass source IP addresses of the clients to backend servers. |
| proxy_protocol_enable | No | Boolean | Specifies whether to enable the ProxyProtocol option to pass the source IP addresses of the clients to backend servers. This parameter is available only for TCPSSL listeners and does not take effect for other types of listeners. |

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

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

Table 4-238 ListenerInsertHeaders

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

| Parameter | Mandatory | Type | Description |
|--------------------------------|-----------|---------|--|
| 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. |
| 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. |

| Parameter | Mandatory | Type | Description |
|------------------------|-----------|---------|--|
| 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 4-239 UpdateListenerIpGroupOption

| Parameter | Mandatory | Type | Description |
|----------------|-----------|---------|---|
| ipgroup_id | No | String | Specifies the ID of the IP address group associated with the listener. This parameter is mandatory when you create the IP address group and is optional when you update the IP address group. The specified IP address group must exist, and the value cannot be null . Minimum: 1 Maximum: 36 |
| enable_ipgroup | No | Boolean | Specifies whether access control is enabled. <ul style="list-style-type: none"> • true: Access control is enabled. • false: Access control is disabled. A listener with access control enabled can be directly deleted. |
| type | No | String | Specifies how access to the listener is controlled. <ul style="list-style-type: none"> • white: A whitelist is configured. Only IP addresses in the whitelist can access the listener. • black: A blacklist is configured. IP addresses in the blacklist are not allowed to access the listener. |

Table 4-240 UpdateListenerQuicConfigOption

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

Response Parameters

Status code: 200

Table 4-241 Response body parameters

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

Table 4-242 Listener

| Parameter | Type | Description |
|-----------------------------|---------|--|
| admin_state_up | Boolean | Specifies the administrative status of the listener. The value can only be true . This parameter is unsupported. Please do not use it. |
| client_ca_tls_container_ref | String | Specifies the ID of the CA certificate used by the listener. This parameter is available only when type is set to client . |

| Parameter | Type | Description |
|---------------------------|--|--|
| connection_limit | Integer | Specifies the maximum number of connections that the load balancer can establish with backend servers. The value -1 indicates that the number of connections is not limited. This parameter is unsupported. Please do not use it. |
| created_at | String | Specifies the time when the listener was created, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> , for example, 2021-07-30T12:03:44Z. |
| default_pool_id | String | Specifies the ID of the default backend server group. If there is no matched forwarding policy, requests are forwarded to the default backend server. |
| default_tls_container_ref | String | Specifies the ID of the server certificate used by the listener. |
| description | String | Provides supplementary information about the listener. |
| http2_enable | Boolean | Specifies whether to use HTTP/2 if you want the clients to use HTTP/2 to communicate with the listener. However, connections between the load balancer and backend servers still use HTTP/1.x by default. Note: <ul style="list-style-type: none">• This parameter is available only for HTTPS listeners.• You cannot configure this parameter for QUIC listeners, and the fixed value is true.• If you configure this parameter for listeners with other protocols, it will not take effect. |
| id | String | Specifies the listener ID. |
| insert_headers | ListenerInsertHeaders object | Specifies the HTTP header fields that can transmit required information to backend servers. For example, the X-Forwarded-ELB-IP header field can transmit the EIP of the load balancer to backend servers. |
| loadbalancers | Array of LoadBalancerRef objects | Specifies the ID of the load balancer that the listener is added to. A listener can be added to only one load balancer. |
| name | String | Specifies the listener name. Note: If you leave the listener name empty, you cannot locate it on the listener list and view its details. |

| Parameter | Type | Description |
|--------------------|-----------------------------|---|
| project_id | String | Specifies the ID of the project where the listener is used. |
| protocol | String | Specifies the protocol used by the listener. The value can be TCP , HTTP , UDP , HTTPS , TERMINATED_HTTPS , QUIC , or TCPSSL . 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. The QUIC listener port cannot be 4789 or the same as the UDP listener port. If this parameter is set to 0 , port_ranges is required. Minimum: 0 Maximum: 65535 |
| sni_container_refs | Array of strings | Specifies the IDs of SNI certificates (server certificates with domain names) used by the listener. Note: <ul style="list-style-type: none">• The domain names of all SNI certificates must be unique.• The total number of domain names of all SNI certificates cannot exceed 50. |
| sni_match_algo | String | Specifies how wildcard domain name matches with the SNI certificates used by the listener. longest_suffix indicates longest suffix match. wildcard indicates wildcard match. The default value is wildcard . |
| tags | Array of Tag objects | Lists the tags. |
| updated_at | String | Specifies the time when the listener was updated, in the format of <i>yyyy-MM-dd"T"HH:mm:ss"Z"</i> , for example, 2021-07-30T12:03:44Z. |

| Parameter | Type | Description |
|---------------------|---------|--|
| tls_ciphers_policy | String | Specifies the security policy used by the listener. |
| security_policy_id | String | Specifies the ID of the custom security policy. |
| enable_member_retry | Boolean | Specifies whether to enable health check retries for backend servers. The value can be true (enable health check retries) or false (disable health check retries). The default value is true . Note: <ul style="list-style-type: none"> • 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 | 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. <ul style="list-style-type: none"> • For TCP listeners, the value ranges from 10 to 4000, and the default value is 300. • For HTTP and HTTPS listeners, the value ranges from 1 to 4000, and the default value is 60. • For UDP listeners of shared load balancers, this parameter does not take effect. |
| client_timeout | Integer | Specifies the timeout duration for waiting for a response from a client, in seconds. There are two situations: <ul style="list-style-type: none"> • If the client fails to send a request header to the load balancer within the timeout duration, the request will be interrupted. • If the interval between two consecutive request bodies reaching the load balancer is greater than the timeout duration, the connection will be disconnected. <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 | Specifies whether to pass source IP addresses of the clients to backend servers. |
| proxy_protocol_enable | Boolean | Specifies whether to enable the ProxyProtocol option to pass the source IP addresses of the clients to backend servers. This parameter is available only for TCPSSL listeners and does not take effect for other types of listeners. |
| enhance_l7policy_enable | Boolean | <p>Specifies whether to enable advanced forwarding. If advanced forwarding is enabled, more flexible forwarding policies and rules are supported. The value can be true (enable advanced forwarding) or false (disable advanced forwarding), and the default value is false.</p> <p>The following scenarios are supported:</p> <ul style="list-style-type: none">• action can be set to REDIRECT_TO_URL (requests will be redirected to another URL) or Fixed_RESPONSE (a fixed response body will be returned to clients).• Parameters priority, redirect_url_config, and fixed_response_config can be specified in a forwarding policy.• Parameter type can be set to METHOD, HEADER, QUERY_STRING, or SOURCE_IP for a forwarding rule.• If type is set to HOST_NAME for a forwarding rule, the value parameter of the forwarding rule supports wildcard asterisks (*).• The conditions parameter can be specified for forwarding rules. <p>Default: false</p> |

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

Table 4-243 ListenerInsertHeaders

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

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

Table 4-244 LoadBalancerRef

| Parameter | Type | Description |
|-----------|--------|---------------------------------|
| id | String | Specifies the load balancer ID. |

Table 4-245 Tag

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

Table 4-246 ListenerIpGroup

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

Table 4-247 ListenerQuicConfig

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

Example Requests

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

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



```
{
  "listener" : {
    "description" : "My listener update.",
    "name" : "My listener",
    "http2_enable" : true
  }
}
```

Example Responses

Status code: 200

Successful request.

```
{
  "listener" : {
    "id" : "0b11747a-b139-492f-9692-2df0b1c87193",
    "name" : "My listener",
    "protocol_port" : 80,
    "protocol" : "TCP",
    "description" : "My listener update.",
    "default_tls_container_ref" : null,
    "admin_state_up" : true,
    "loadbalancers" : [ {
      "id" : "098b2f68-af1c-41a9-8efd-69958722af62"
    } ],
    "member_timeout" : null,
    "client_timeout" : null,
    "keepalive_timeout" : 300,
    "client_ca_tls_container_ref" : null,
    "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
    "sni_container_refs" : [ ],
    "connection_limit" : -1,
    "default_pool_id" : null,
    "tls_ciphers_policy" : "tls-1-0",
    "tags" : [ ],
    "created_at" : "2019-04-02T00:12:32Z",
    "updated_at" : "2019-04-02T17:43:46Z",
    "http2_enable" : true,
    "ipgroup" : null,
    "insert_headers" : {
      "X-Forwarded-ELB-IP" : true
    },
    "transparent_client_ip_enable" : false
  },
  "request_id" : "5d56d89a-2271-4a75-8c02-804e3bc7b671"
}
```

Status Codes

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

Error Codes

See [Error Codes](#).

4.8.5 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 4-248 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 4-249 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

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 4-250 Path Parameters

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

Request Parameters

Table 4-251 Request header parameters

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

Table 4-252 Request body parameters

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

Table 4-253 CreatePoolOption

| Parameter | Mandatory | Type | Description |
|----------------|-----------|---------|---|
| admin_state_up | No | Boolean | Specifies the administrative status of the backend server group. The value can only be updated to true . This parameter is unsupported. Please do not use it. |
| description | No | String | Provides supplementary information about the backend server group. Minimum: 0 Maximum: 255 |

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

| Parameter | Mandatory | Type | Description |
|---------------------|-----------|---|--|
| name | No | String | Specifies the backend server group name. Minimum: 0 Maximum: 255 |
| project_id | No | String | Specifies the project ID of the backend server group. Minimum: 32 Maximum: 32 |
| protocol | Yes | String | Specifies the protocol used by the backend server group to receive requests. The value can be TCP , UDP , HTTP , HTTPS , or QUIC .Note: <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 or HTTPS. • If the listener's protocol is TERMINATED_HTTPS, the protocol of the backend server group must be HTTP. • If the backend server group protocol is QUIC, sticky session must be enabled with type set to SOURCE_IP. Minimum: 1 Maximum: 255 |
| session_persistence | No | CreatePoolSessionPersistenceOption object | Specifies the sticky session. |

| Parameter | Mandatory | Type | Description |
|-----------------------------------|-----------|----------------------------------|--|
| 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. This parameter can be used when the protocol of the backend server group is HTTP or HTTPS. An error will be returned if the protocol is not HTTP or HTTPS. |
| member_deletion_protection_enable | No | Boolean | Specifies whether to enable deletion protection for the load balancer. <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. |
| vpc_id | No | String | Specifies the ID of the VPC where the backend server group works. <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. Minimum: 0 Maximum: 36 |

| Parameter | Mandatory | Type | Description |
|------------|-----------|--------|--|
| type | No | String | <p>Specifies the type of the backend server group.</p> <p>Values:</p> <ul style="list-style-type: none"> • instance: Any type of backend servers can be added. vpc_id is mandatory. • ip: Only IP as backend servers can be added. vpc_id cannot be specified. • "": Any type of backend servers can be added. <p>Note:</p> <ul style="list-style-type: none"> • If this parameter is not passed, any type of backend servers can be added. type will be returned as an empty string. • Specify one of listener_id, loadbalancer_id, or type. Shared load balancers can only be added to the backend server group with loadbalancer_id or listener_id specified. <p>Minimum: 0 Maximum: 36</p> |
| ip_version | No | String | <p>Specifies the IP address version supported by the backend server group.</p> <ul style="list-style-type: none"> • Shared load balancers: The value is fixed at v4. • Dedicated load balancers: The value can be dualstack, v6, 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. <p>Minimum: 1 Maximum: 20</p> |

Table 4-254 CreatePoolSessionPersistenceOption

| Parameter | Mandatory | Type | Description |
|-------------|-----------|--------|---|
| cookie_name | No | String | <p>Specifies the cookie name.</p> <p>For shared load balancers, the name can contain a maximum of 64 characters, including letters, digits, underscores (_), and hyphens (-).</p> <p>For dedicated load balancers, the name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</p> <p>Note:</p> <p>This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned.</p> |
| type | Yes | 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 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 | 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 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 4-255 CreatePoolSlowStartOption

| Parameter | Mandatory | Type | Description |
|-----------|-----------|---------|--|
| enable | No | Boolean | <p>Specifies whether to enable slow start.</p> <ul style="list-style-type: none"> true: Enable slow start. false: Disable slow start. <p>Default: false</p> |
| 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> <p>Minimum: 30 Maximum: 1200 Default: 30</p> |

Response Parameters

Status code: 201

Table 4-256 Response body parameters

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

| Parameter | Type | Description |
|-----------|-----------------------------|-------------------------------------|
| pool | Pool object | Specifies the backend server group. |

Table 4-257 Pool

| Parameter | Type | Description |
|------------------|--|--|
| admin_state_up | Boolean | Specifies the administrative status of the backend server group. The value can only be true . This parameter is unsupported. Please do not use it. |
| 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. The value can be one of the following: <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 Note: <ul style="list-style-type: none">● If the value is SOURCE_IP, the weight parameter will not take effect for backend servers.● QUIC_CID is supported only when the protocol of the backend server group is QUIC. |
| 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. |

| Parameter | Type | Description |
|---------------------|----------------------------------|--|
| name | String | Specifies the backend server group name. |
| project_id | String | Specifies the project ID. |
| protocol | String | <p>Specifies the protocol used by the backend server group to receive requests. The value can be TCP, UDP, HTTP, HTTPS, QUIC, or TCPSSL.</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 or HTTPS.• If the listener's protocol is TERMINATED_HTTPS, the protocol of the backend server group must be HTTP.• If the protocol of the backend server group is QUIC, session_persistence must be enabled and type must be set to SOURCE_IP. |
| session_persistence | SessionPersistence object | Specifies the sticky session. |
| ip_version | String | <p>Specifies the IP address version supported by the backend server group.</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, UDP, or QUIC, the value is dualstack. If the protocol of the backend server group is HTTP or HTTPS, the value is v4. |

| Parameter | Type | Description |
|-----------------------------------|-------------------------|--|
| slow_start | SlowStart object | <p>Specifies slow start details. After you enable slow start, new backend servers added to the backend server group are warmed up, and the number of requests they can receive increases linearly during the configured slow start duration.</p> <p>This parameter can be used when the protocol of the backend server group is HTTP or HTTPS. An error will be returned if the protocol is not HTTP or HTTPS.</p> |
| member_deletion_protection_enable | Boolean | <p>Specifies whether to enable deletion protection.</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 a 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> |
| updated_at | String | <p>Specifies the time when when a backend server group was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p> <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> |
| vpc_id | String | <p>Specifies the ID of the VPC where the backend server group works.</p> |
| type | String | <p>Specifies the type of the backend server group.</p> <p>Values:</p> <ul style="list-style-type: none">● instance: Any type of backend servers can be added. vpc_id is mandatory.● ip: Only IP as backend servers can be added. vpc_id cannot be specified.● "": Any type of backend servers can be added. |

Table 4-258 ListenerRef

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the listener ID. |

Table 4-259 LoadBalancerRef

| Parameter | Type | Description |
|-----------|--------|---------------------------------|
| id | String | Specifies the load balancer ID. |

Table 4-260 MemberRef

| Parameter | Type | Description |
|-----------|--------|----------------------------------|
| id | String | Specifies the backend server ID. |

Table 4-261 SessionPersistence

| Parameter | Type | Description |
|-------------|--------|---|
| cookie_name | String | <p>Specifies the cookie name.</p> <p>For shared load balancers, the name can contain a maximum of 64 characters, including letters, digits, underscores (_), and hyphens (-).</p> <p>For dedicated load balancers, the name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</p> <p>Note:</p> <p>This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned.</p> |

| Parameter | Type | Description |
|---------------------|---------|---|
| type | 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. |
| 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 4-262 SlowStart

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

Example Requests

- Creating a backend server group whose backend protocol is HTTP

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

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

- Creating a backend server group whose backend protocol is TCP

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

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

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 4-263 Path Parameters

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

Table 4-264 Query Parameters

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

| Parameter | Mandatory | Type | Description |
|------------------|-----------|---------|---|
| limit | No | Integer | Specifies the number of records on each page. Minimum: 0 Maximum: 2000 Default: 2000 |
| page_reverse | No | Boolean | Specifies whether to use reverse query. Values: <ul style="list-style-type: none">• true: Query the previous page.• false (default): Query the next page. Note: <ul style="list-style-type: none">• This parameter must be used together with limit.• If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker. |
| description | No | Array | Provides supplementary information about the backend server group. Multiple descriptions can be queried in the format of <i>description=xxx&description=xx</i> . |
| admin_state_up | No | Boolean | Specifies the administrative status of the backend server group. This parameter is unsupported. Please do not use it. |
| healthmonitor_id | No | Array | Specifies the ID of the health check configured for the backend server group. Multiple IDs can be queried in the format of <i>healthmonitor_id=xxx&healthmonitor_id=xxx</i> . |
| id | No | Array | Specifies the ID of the backend server group. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> . |

| Parameter | Mandatory | Type | Description |
|-----------------|-----------|-------|--|
| name | No | Array | Specifies the backend server group name. Multiple names can be queried in the format of <i>name=xxx&name=xxx</i> . |
| loadbalancer_id | No | Array | Specifies the ID of the load balancer with which the backend server group is associated. Multiple IDs can be queried in the format of <i>loadbalancer_id=xxx&loadbalancer_id=xxx</i> . |
| protocol | No | Array | Specifies the protocol used by the backend server group to receive requests from the load balancer. The value can be TCP, UDP, HTTP, HTTPS, QUIC, or TCPSSL . Multiple protocols can be queried in the format of <i>protocol=xxx&protocol=xxx</i> . |
| lb_algorithm | No | Array | Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group. The value can be one of the following: <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 Multiple algorithms can be queried in the format of <i>lb_algorithm=xxx&lb_algorithm=xxx</i> . |

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

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

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

Request Parameters

Table 4-265 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 4-266 Response body parameters

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

Table 4-267 PageInfo

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

Table 4-268 Pool

| Parameter | Type | Description |
|------------------|--|--|
| admin_state_up | Boolean | Specifies the administrative status of the backend server group. The value can only be true . This parameter is unsupported. Please do not use it. |
| 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. The value can be one of the following: <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 Note: <ul style="list-style-type: none">● If the value is SOURCE_IP, the weight parameter will not take effect for backend servers.● QUIC_CID is supported only when the protocol of the backend server group is QUIC. |
| listeners | Array of ListenerRef objects | Specifies the IDs of the listeners with which the backend server group is associated. |

| Parameter | Type | Description |
|---------------------|--|---|
| 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. |
| protocol | String | Specifies the protocol used by the backend server group to receive requests. The value can be TCP , UDP , HTTP , HTTPS , QUIC , or TCPSSL . Note: <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 or HTTPS.• If the listener's protocol is TERMINATED_HTTPS, the protocol of the backend server group must be HTTP.• If the protocol of the backend server group is QUIC, session_persistence must be enabled and type must be set to SOURCE_IP. |
| session_persistence | SessionPersistence object | Specifies the sticky session. |
| ip_version | 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, UDP, or QUIC, the value is dualstack. If the protocol of the backend server group is HTTP or HTTPS, the value is v4. |

| Parameter | Type | Description |
|-----------------------------------|-------------------------|--|
| slow_start | SlowStart object | <p>Specifies slow start details. After you enable slow start, new backend servers added to the backend server group are warmed up, and the number of requests they can receive increases linearly during the configured slow start duration.</p> <p>This parameter can be used when the protocol of the backend server group is HTTP or HTTPS. An error will be returned if the protocol is not HTTP or HTTPS.</p> |
| member_deletion_protection_enable | Boolean | <p>Specifies whether to enable deletion protection.</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 a 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> |
| updated_at | String | <p>Specifies the time when when a backend server group was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p> <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> |
| vpc_id | String | <p>Specifies the ID of the VPC where the backend server group works.</p> |
| type | String | <p>Specifies the type of the backend server group.</p> <p>Values:</p> <ul style="list-style-type: none">● instance: Any type of backend servers can be added. vpc_id is mandatory.● ip: Only IP as backend servers can be added. vpc_id cannot be specified.● "": Any type of backend servers can be added. |

Table 4-269 ListenerRef

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the listener ID. |

Table 4-270 LoadBalancerRef

| Parameter | Type | Description |
|-----------|--------|---------------------------------|
| id | String | Specifies the load balancer ID. |

Table 4-271 MemberRef

| Parameter | Type | Description |
|-----------|--------|----------------------------------|
| id | String | Specifies the backend server ID. |

Table 4-272 SessionPersistence

| Parameter | Type | Description |
|-------------|--------|---|
| cookie_name | String | <p>Specifies the cookie name.</p> <p>For shared load balancers, the name can contain a maximum of 64 characters, including letters, digits, underscores (_), and hyphens (-).</p> <p>For dedicated load balancers, the name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</p> <p>Note:</p> <p>This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned.</p> |

| Parameter | Type | Description |
|---------------------|---------|---|
| type | String | Specifies the sticky session type. The value can be SOURCE_IP , HTTP_COOKIE , or APP_COOKIE . Note: <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. |
| persistence_timeout | Integer | Specifies the stickiness duration, in minutes. This parameter will not take effect when type is set to APP_COOKIE . <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 SlowStart

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

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"
  }, {
    "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"
  } ],
  "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 Viewing Details of a Backend Server Group

Function

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

Calling Method

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

URI

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

Table 4-274 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 4-275 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 4-276 Response body parameters

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

Table 4-277 Pool

| Parameter | Type | Description |
|------------------|---|--|
| admin_state_up | Boolean | Specifies the administrative status of the backend server group. The value can only be true . This parameter is unsupported. Please do not use it. |
| 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. The value can be one of the following: <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 Note: <ul style="list-style-type: none">● If the value is SOURCE_IP, the weight parameter will not take effect for backend servers.● QUIC_CID is supported only when the protocol of the backend server group is QUIC. |
| 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. |
| protocol | String | Specifies the protocol used by the backend server group to receive requests. The value can be TCP , UDP , HTTP , HTTPS , QUIC , or TCPSSL . Note: <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 or HTTPS.• If the listener's protocol is TERMINATED_HTTPS, the protocol of the backend server group must be HTTP.• If the protocol of the backend server group is QUIC, session_persistence must be enabled and type must be set to SOURCE_IP. |
| session_persistence | SessionPersistence object | Specifies the sticky session. |
| ip_version | 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, UDP, or QUIC, the value is dualstack. If the protocol of the backend server group is HTTP or HTTPS, the value is v4. |

| Parameter | Type | Description |
|-----------------------------------|-------------------------|--|
| slow_start | SlowStart object | <p>Specifies slow start details. After you enable slow start, new backend servers added to the backend server group are warmed up, and the number of requests they can receive increases linearly during the configured slow start duration.</p> <p>This parameter can be used when the protocol of the backend server group is HTTP or HTTPS. An error will be returned if the protocol is not HTTP or HTTPS.</p> |
| member_deletion_protection_enable | Boolean | <p>Specifies whether to enable deletion protection.</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 a 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> |
| updated_at | String | <p>Specifies the time when when a backend server group was updated. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p> <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> |
| vpc_id | String | <p>Specifies the ID of the VPC where the backend server group works.</p> |
| type | String | <p>Specifies the type of the backend server group.</p> <p>Values:</p> <ul style="list-style-type: none">● instance: Any type of backend servers can be added. vpc_id is mandatory.● ip: Only IP as backend servers can be added. vpc_id cannot be specified.● "": Any type of backend servers can be added. |

Table 4-278 ListenerRef

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the listener ID. |

Table 4-279 LoadBalancerRef

| Parameter | Type | Description |
|-----------|--------|---------------------------------|
| id | String | Specifies the load balancer ID. |

Table 4-280 MemberRef

| Parameter | Type | Description |
|-----------|--------|----------------------------------|
| id | String | Specifies the backend server ID. |

Table 4-281 SessionPersistence

| Parameter | Type | Description |
|-------------|--------|---|
| cookie_name | String | <p>Specifies the cookie name.</p> <p>For shared load balancers, the name can contain a maximum of 64 characters, including letters, digits, underscores (_), and hyphens (-).</p> <p>For dedicated load balancers, the name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</p> <p>Note:</p> <p>This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned.</p> |

| Parameter | Type | Description |
|---------------------|---------|---|
| type | String | Specifies the sticky session type. The value can be SOURCE_IP , HTTP_COOKIE , or APP_COOKIE . Note: <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. |
| persistence_timeout | Integer | Specifies the stickiness duration, in minutes. This parameter will not take effect when type is set to APP_COOKIE . <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 4-282 SlowStart

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

Example Requests

Querying details of a backend server group

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

Example Responses

Status code: 200

Successful request.

```
{
  "pool" : {
    "type" : "",
    "vpc_id" : "",
    "lb_algorithm" : "LEAST_CONNECTIONS",
    "protocol" : "TCP",
    "description" : "My pool",
    "admin_state_up" : true,
    "member_deletion_protection_enable" : false,
    "loadbalancers" : [ {
      "id" : "098b2f68-af1c-41a9-8efd-69958722af62"
    } ],
    "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
    "session_persistence" : null,
    "healthmonitor_id" : "",
    "listeners" : [ {
      "id" : "0b11747a-b139-492f-9692-2df0b1c87193"
    }, {
      "id" : "61942790-2367-482a-8b0e-93840ea2a1c6"
    }, {
      "id" : "fd8f954c-f0f8-4d39-bb1d-41637cd6b1be"
    } ],
    "members" : [ ],
    "id" : "36ce7086-a496-4666-9064-5ba0e6840c75",
    "name" : "My pool.",
    "ip_version" : "dualstack"
  },
  "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 4-283 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 4-284 Request header parameters

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

Table 4-285 Request body parameters

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

Table 4-286 UpdatePoolOption

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

| Parameter | Mandatory | Type | Description |
|---------------------|-----------|---|--|
| lb_algorithm | No | String | <p>Specifies the load balancing algorithm used by the load balancer to route requests to backend servers in the associated backend server group.</p> <p>The value can be one of the following:</p> <ul style="list-style-type: none">● ROUND_ROBIN: weighted round robin● LEAST_CONNECTIONS: weighted least connections● SOURCE_IP: source IP hash● QUIC_CID: connection ID <p>Note:</p> <ul style="list-style-type: none">● If the value is SOURCE_IP, the weight parameter will not take effect for backend servers.● QUIC_CID is supported only when the protocol of the backend server group is QUIC. |
| name | No | String | <p>Specifies the backend server group name.</p> <p>Minimum: 0</p> <p>Maximum: 255</p> |
| session_persistence | No | UpdatePoolSessionPersistenceOption object | <p>Specifies the sticky session.</p> |
| slow_start | No | UpdatePoolSlowStartOption object | <p>Specifies slow start details. After you enable slow start, new backend servers added to the backend server group are warmed up, and the number of requests they can receive increases linearly during the configured slow start duration.</p> <p>This parameter can be used when the protocol of the backend server group is HTTP or HTTPS. An error will be returned if the protocol is not HTTP or HTTPS.</p> |

| Parameter | Mandatory | Type | Description |
|-----------------------------------|-----------|---------|--|
| member_deletion_protection_enable | No | Boolean | <p>Specifies whether to enable deletion protection for the load balancer.</p> <ul style="list-style-type: none"> • true: Enable deletion protection. • false (default): Disable deletion protection. <p>NOTE 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> <p>Minimum: 0 Maximum: 36</p> |
| type | No | String | <p>Specifies the type of the backend server group.</p> <p>Values:</p> <ul style="list-style-type: none"> • instance: Any type of backend servers can be added. vpc_id is mandatory. • ip: Only IP as backend servers can be added. vpc_id cannot be specified. • "": Any type of backend servers can be added. <p>Note: This parameter can be updated only when type is left blank.</p> |

Table 4-287 UpdatePoolSessionPersistenceOption

| Parameter | Mandatory | Type | Description |
|-------------|-----------|--------|--|
| cookie_name | No | String | <p>Specifies the cookie name.</p> <p>For shared load balancers, the name can contain a maximum of 64 characters, including letters, digits, underscores (_), and hyphens (-).</p> <p>For dedicated load balancers, the name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</p> <p>Note:</p> <p>This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned.</p> |
| 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 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 | 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 4-288 UpdatePoolSlowStartOption

| Parameter | Mandatory | Type | Description |
|-----------|-----------|---------|---|
| enable | No | Boolean | <p>Specifies whether to enable slow start.</p> <ul style="list-style-type: none"> true: Enable slow start. false: Disable slow start. |
| 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> <p>Minimum: 30 Maximum: 1200</p> |

Response Parameters

Status code: 200

Table 4-289 Response body parameters

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

Table 4-290 Pool

| Parameter | Type | Description |
|------------------|---|--|
| admin_state_up | Boolean | Specifies the administrative status of the backend server group. The value can only be true . This parameter is unsupported. Please do not use it. |
| 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. The value can be one of the following: <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 Note: <ul style="list-style-type: none">● If the value is SOURCE_IP, the weight parameter will not take effect for backend servers.● QUIC_CID is supported only when the protocol of the backend server group is QUIC. |
| 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. The value can be TCP, UDP, HTTP, HTTPS, QUIC, or TCPSSL.</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 or HTTPS. • If the listener's protocol is TERMINATED_HTTPS, the protocol of the backend server group must be HTTP. • If the protocol of the backend server group is QUIC, session_persistence must be enabled and type must be set to SOURCE_IP. |
| session_persistence | SessionPersistence object | Specifies the sticky session. |
| ip_version | String | <p>Specifies the IP address version supported by the backend server group.</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, UDP, or QUIC, the value is dualstack. If the protocol of the backend server group is HTTP or HTTPS, 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> |

| Parameter | Type | Description |
|-----------------------------------|---------|---|
| member_deletion_protection_enable | Boolean | Specifies whether to enable deletion protection. <ul style="list-style-type: none">• true: Enable deletion protection.• false: Disable deletion protection. NOTE Disable deletion protection for all your resources before deleting your account. |
| created_at | String | Specifies the time when a backend server group was created. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). 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 when a 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. Values: <ul style="list-style-type: none">• instance: Any type of backend servers can be added. vpc_id is mandatory.• ip: Only IP as backend servers can be added. vpc_id cannot be specified.• "": Any type of backend servers can be added. |

Table 4-291 ListenerRef

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the listener ID. |

Table 4-292 LoadBalancerRef

| Parameter | Type | Description |
|-----------|--------|---------------------------------|
| id | String | Specifies the load balancer ID. |

Table 4-293 MemberRef

| Parameter | Type | Description |
|-----------|--------|----------------------------------|
| id | String | Specifies the backend server ID. |

Table 4-294 SessionPersistence

| Parameter | Type | Description |
|-------------|--------|---|
| cookie_name | String | <p>Specifies the cookie name.</p> <p>For shared load balancers, the name can contain a maximum of 64 characters, including letters, digits, underscores (_), and hyphens (-).</p> <p>For dedicated load balancers, the name can contain a maximum of 255 characters, including letters, digits, underscores (_), hyphens (-), and periods (.).</p> <p>Note:</p> <p>This parameter will take effect only when type is set to APP_COOKIE. Otherwise, an error will be returned.</p> |
| type | 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 | 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 4-295 SlowStart

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

Example Requests

Changing the load balancing algorithm of a backend server group

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

```
{
  "pool": {
    "name": "My pool.",
    "description": "My pool update",
    "lb_algorithm": "LEAST_CONNECTIONS"
  }
}
```

Example Responses

Status code: 200

Successful request.

```
{
  "pool": {
```

```
"type" : "",
"vpc_id" : "",
"lb_algorithm" : "LEAST_CONNECTIONS",
"protocol" : "TCP",
"description" : "My pool update",
"admin_state_up" : true,
"member_deletion_protection_enable" : false,
"loadbalancers" : [ {
  "id" : "098b2f68-af1c-41a9-8efd-69958722af62"
} ],
"project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
"session_persistence" : null,
"healthmonitor_id" : null,
"listeners" : [ {
  "id" : "0b11747a-b139-492f-9692-2df0b1c87193"
}, {
  "id" : "61942790-2367-482a-8b0e-93840ea2a1c6"
}, {
  "id" : "fd8f954c-f0f8-4d39-bb1d-41637cd6b1be"
} ],
"members" : [ ],
"id" : "36ce7086-a496-4666-9064-5ba0e6840c75",
"name" : "My pool.",
"ip_version" : "dualstack"
},
"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 4-296 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 4-297 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 4-298 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 4-299 Request header parameters

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

Table 4-300 Request body parameters

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

Table 4-301 CreateMemberOption

| Parameter | Mandatory | Type | Description |
|----------------|-----------|---------|---|
| address | Yes | String | <p>Specifies the private IP address bound to the backend server.</p> <ul style="list-style-type: none">• If subnet_cidr_id is left blank, IP as a Backend is enabled. In this case, the IP address must be an IPv4 address.• If subnet_cidr_id is not left blank, the IP address can be IPv4 or IPv6. It must be in the subnet specified by subnet_cidr_id and can only be bound to the primary NIC of the backend server. <p>Minimum: 1 Maximum: 64</p> |
| 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 cloud servers exist. If cloud servers exist, the value is true. Otherwise, the value is false.</p> |
| name | No | String | <p>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.</p> <p>Minimum: 0 Maximum: 255</p> |

| Parameter | Mandatory | Type | Description |
|---------------|-----------|---------|---|
| project_id | No | String | Specifies the project ID. Minimum: 1 Maximum: 32 |
| protocol_port | No | Integer | Specifies the port used by the backend server to receive requests. NOTE This parameter can be left blank because it does not take effect if any_port_enable is set to true for a backend server group. Minimum: 1 Maximum: 65535 |

| Parameter | Mandatory | Type | Description |
|----------------|-----------|--------|--|
| subnet_cidr_id | No | String | <p>Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides.</p> <p>You can query parameter neutron_subnet_id in the response by calling the API (GET https:// {VPC_Endpoint}/v1/ {project_id}/subnets) to obtain the ID of the IPv4 subnet, and query parameter neutron_network_id in the response by calling the API (GET https:// {VPC_Endpoint}/v1/ {project_id}/subnets) to obtain the ID of the IPv6 subnet.</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 as a Backend has been enabled for the load balancer, you do not need to specify this parameter. In this case, IP as backend servers must use private IPv4 addresses, and the protocol of the backend server group must be TCP, HTTP, or HTTPS. <p>Minimum: 1 Maximum: 36</p> |

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

Response Parameters

Status code: 201

Table 4-302 Response body parameters

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

Table 4-303 Member

| Parameter | Type | Description |
|------------|--------|---|
| id | String | Specifies the backend server ID. Note: The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that has already associated with the load balancer. |
| name | String | Specifies the backend server name. Note: The name is not an ECS name. |
| project_id | String | Specifies the project ID of the backend server. |

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

| Parameter | Type | Description |
|------------------|--------------------------------------|---|
| address | String | <p>Specifies the private IP address bound to the backend server.</p> <ul style="list-style-type: none"> • If subnet_cidr_id is left blank, IP as a Backend is enabled. In this case, the IP address must be an IPv4 address. • If subnet_cidr_id is not left blank, the IP address can be IPv4 or IPv6. It must be in the subnet specified by subnet_cidr_id and can only be bound to the primary NIC of the backend server. |
| ip_version | String | <p>Specifies the IP version supported by the backend server. The value can be v4 (IPv4) or v6 (IPv6), depending on the value of address returned by the system.</p> |
| device_owner | String | <p>Specifies whether the backend server is associated with an ECS.</p> <ul style="list-style-type: none"> • If this parameter is left blank, the backend server is not associated with an ECS. • If the value is compute:{az_name}, the backend server is associated with an ECS. {az_name} indicates the AZ where the ECS resides. <p>This parameter is unsupported. Please do not use it.</p> |
| device_id | String | <p>Specifies the ID of the ECS with which the backend server is associated. If this parameter is left blank, the backend server is not associated with an ECS.</p> <p>This parameter is unsupported. Please do not use it.</p> |
| operating_status | String | <p>Specifies the health status of the backend server if listener_id under status is not specified. The value can be one of the following:</p> <ul style="list-style-type: none"> • ONLINE: The backend server is running normally. • NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs. • OFFLINE: The cloud server used as the backend server is stopped or does not exist. |
| status | Array of MemberStatus objects | <p>Specifies the health status of the backend server if listener_id is specified.</p> |

| Parameter | Type | Description |
|-----------------|---|--|
| loadbalancer_id | String | Specifies the ID of the load balancer with which the backend server is associated. This parameter is unsupported. Please do not use it. |
| loadbalancers | Array of ResourceID objects | Specifies the IDs of the load balancers associated with the backend server. This parameter is unsupported. Please do not use it. |
| created_at | String | Specifies the time when a backend server was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). 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 a 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. Values: <ul style="list-style-type: none">● ip: IP as backend servers● instance: ECSs used as backend servers |
| instance_id | String | Specifies the ID of the ECS used as the backend server. If this parameter is left blank, the backend server is not an ECS. For example, it may be an IP address. |

Table 4-304 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. The value can be one of the following: <ul style="list-style-type: none"> ● ONLINE: The backend server is running normally. ● NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs. ● OFFLINE: The cloud server used as the backend server is stopped or does not exist. |

Table 4-305 ResourceID

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the resource ID. |

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 a server of IP as a Backend

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 4-306 Path Parameters

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

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| pool_id | Yes | String | Specifies the ID of the backend server group. |

Table 4-307 Query Parameters

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

| Parameter | Mandatory | Type | Description |
|----------------|-----------|---------|---|
| weight | No | Array | Specifies the weight of the backend server. Requests are routed to backend servers in the same backend server group based on their weights. The value ranges from 0 to 100 . The larger the weight is, the higher proportion of requests the backend server receives. If the weight is set to 0, the backend server will not accept new requests. Multiple weights can be queried in the format of <i>weight=xxx&weight=xxx</i> . |
| admin_state_up | No | Boolean | Specifies the administrative status of the backend server. The value can be true or false . Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether cloud servers exist. If cloud servers exist, the value is true . Otherwise, the value is false . |
| subnet_cidr_id | No | Array | Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides. Multiple IDs can be queried in the format of <i>subnet_cidr_id=xxx&subnet_cidr_id=xxx</i> . |
| address | No | Array | Specifies the IP address bound to the backend server. Multiple IP addresses can be queried in the format of <i>address=xxx&address=xxx</i> . |
| protocol_port | No | Array | Specifies the port used by the backend server to receive requests. Multiple ports can be queried in the format of <i>protocol_port=xxx&protocol_port=xxx</i> . |

| Parameter | Mandatory | Type | Description |
|-----------------------|-----------|-------|---|
| id | No | Array | Specifies the backend server ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> . |
| operating_status | No | Array | Specifies the health status of the backend server. The value can be one of the following: <ul style="list-style-type: none"> ● ONLINE: The backend server is running normally. ● NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs. ● OFFLINE: The cloud server used as the backend server is stopped or does not exist. Multiple operating statuses can be queried in the format of <i>operating_status=xxx&operating_status=xxx</i> . |
| enterprise_project_id | No | Array | Specifies the enterprise project ID. <ul style="list-style-type: none"> ● If this parameter is not passed, resources in the default enterprise project are queried, and authentication is performed based on the default enterprise project. ● If this parameter is passed, its value can be the ID of an existing enterprise project (resources in the specific enterprise project are required) or all_granted_eps (resources in all enterprise projects are queried). Multiple IDs can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i> . |

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

Request Parameters

Table 4-308 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 4-309 Response body parameters

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

| Parameter | Type | Description |
|-----------|---|-------------------------------|
| page_info | PageInfo object | Shows pagination information. |
| members | Array of Member objects | Lists the backend servers. |

Table 4-310 PageInfo

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

Table 4-311 Member

| Parameter | Type | Description |
|----------------|---------|--|
| id | String | Specifies the backend server ID. Note: The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that has already associated with the load balancer. |
| name | String | Specifies the backend server name. Note: The name is not an ECS name. |
| project_id | String | Specifies the project ID of the backend server. |
| pool_id | String | Specifies the ID of the backend server group to which the backend server belongs. This parameter is unsupported. Please do not use it. |
| admin_state_up | Boolean | Specifies the administrative status of the backend server. The value can be true or false . Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether cloud servers exist. If cloud servers exist, the value is true . Otherwise, the value is false . |

| Parameter | Type | Description |
|----------------|---------|---|
| subnet_cidr_id | String | <p>Specifies the ID of the IPv4 or IPv6 subnet where the backend server resides.</p> <p>This parameter can be left blank, indicating that IP as a Backend has been enabled for the load balancer. In this case, IP addresses of these servers must be IPv4 addresses, and the protocol of the backend server group must be TCP, HTTP, or HTTPS.</p> <p>The IPv4 or IPv6 subnet must be in the same VPC as the subnet of the load balancer.</p> |
| protocol_port | Integer | <p>Specifies the port used by the backend server to receive requests.</p> <p>NOTE This parameter can be left blank because it does not take effect if any_port_enable is set to true for a backend server group.</p> <p>Minimum: 1 Maximum: 65535</p> |
| weight | Integer | <p>Specifies the weight of the backend server. Requests are routed to backend servers in the same backend server group based on their weights.</p> <p>The value ranges from 0 to 100, and the default value is 1. The larger the weight is, the higher proportion of requests the backend server receives. If the weight is set to 0, the backend server will not accept new requests.</p> <p>If lb_algorithm is set to SOURCE_IP, this parameter will not take effect.</p> <p>Minimum: 0 Maximum: 100</p> |
| address | String | <p>Specifies the private IP address bound to the backend server.</p> <ul style="list-style-type: none"> • If subnet_cidr_id is left blank, IP as a Backend is enabled. In this case, the IP address must be an IPv4 address. • If subnet_cidr_id is not left blank, the IP address can be IPv4 or IPv6. It must be in the subnet specified by subnet_cidr_id and can only be bound to the primary NIC of the backend server. |
| ip_version | String | <p>Specifies the IP version supported by the backend server. The value can be v4 (IPv4) or v6 (IPv6), depending on the value of address returned by the system.</p> |

| Parameter | Type | Description |
|------------------|--------------------------------------|---|
| device_owner | String | <p>Specifies whether the backend server is associated with an ECS.</p> <ul style="list-style-type: none"> If this parameter is left blank, the backend server is not associated with an ECS. If the value is compute:{az_name}, the backend server is associated with an ECS. {az_name} indicates the AZ where the ECS resides. <p>This parameter is unsupported. Please do not use it.</p> |
| device_id | String | <p>Specifies the ID of the ECS with which the backend server is associated. If this parameter is left blank, the backend server is not associated with an ECS.</p> <p>This parameter is unsupported. Please do not use it.</p> |
| operating_status | String | <p>Specifies the health status of the backend server if listener_id under status is not specified. The value can be one of the following:</p> <ul style="list-style-type: none"> ONLINE: The backend server is running normally. NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs. OFFLINE: The cloud server used as the backend server is stopped or does not exist. |
| status | Array of MemberStatus objects | <p>Specifies the health status of the backend server if listener_id is specified.</p> |
| loadbalancer_id | String | <p>Specifies the ID of the load balancer with which the backend server is associated.</p> <p>This parameter is unsupported. Please do not use it.</p> |
| loadbalancers | Array of ResourceID objects | <p>Specifies the IDs of the load balancers associated with the backend server.</p> <p>This parameter is unsupported. Please do not use it.</p> |

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

Table 4-312 MemberStatus

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

Table 4-313 ResourceID

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the resource ID. |

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 Details of a Backend Server

Function

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

Calling Method

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

URI

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

Table 4-314 Path Parameters

| Parameter | Mandatory | Type | Description |
|------------|-----------|--------|---|
| project_id | Yes | String | Specifies the project ID. |
| pool_id | Yes | String | Specifies the ID of the backend server group. |
| member_id | Yes | String | Specifies the backend server ID. Note: The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that has already associated with the load balancer. |

Request Parameters

Table 4-315 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 4-316** Response body parameters

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

Table 4-317 Member

| Parameter | Type | Description |
|------------|--------|---|
| id | String | Specifies the backend server ID. Note: The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that has already associated with the load balancer. |
| name | String | Specifies the backend server name. Note: The name is not an ECS name. |
| project_id | String | Specifies the project ID of the backend server. |
| pool_id | String | Specifies the ID of the backend server group to which the backend server belongs. This parameter is unsupported. Please do not use it. |

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

| Parameter | Type | Description |
|------------------|--------------------------------------|---|
| address | String | <p>Specifies the private IP address bound to the backend server.</p> <ul style="list-style-type: none"> • If subnet_cidr_id is left blank, IP as a Backend is enabled. In this case, the IP address must be an IPv4 address. • If subnet_cidr_id is not left blank, the IP address can be IPv4 or IPv6. It must be in the subnet specified by subnet_cidr_id and can only be bound to the primary NIC of the backend server. |
| ip_version | String | <p>Specifies the IP version supported by the backend server. The value can be v4 (IPv4) or v6 (IPv6), depending on the value of address returned by the system.</p> |
| device_owner | String | <p>Specifies whether the backend server is associated with an ECS.</p> <ul style="list-style-type: none"> • If this parameter is left blank, the backend server is not associated with an ECS. • If the value is compute:{az_name}, the backend server is associated with an ECS. {az_name} indicates the AZ where the ECS resides. <p>This parameter is unsupported. Please do not use it.</p> |
| device_id | String | <p>Specifies the ID of the ECS with which the backend server is associated. If this parameter is left blank, the backend server is not associated with an ECS.</p> <p>This parameter is unsupported. Please do not use it.</p> |
| operating_status | String | <p>Specifies the health status of the backend server if listener_id under status is not specified. The value can be one of the following:</p> <ul style="list-style-type: none"> • ONLINE: The backend server is running normally. • NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs. • OFFLINE: The cloud server used as the backend server is stopped or does not exist. |
| status | Array of MemberStatus objects | <p>Specifies the health status of the backend server if listener_id is specified.</p> |

| Parameter | Type | Description |
|-----------------|---|--|
| loadbalancer_id | String | Specifies the ID of the load balancer with which the backend server is associated. This parameter is unsupported. Please do not use it. |
| loadbalancers | Array of ResourceID objects | Specifies the IDs of the load balancers associated with the backend server. This parameter is unsupported. Please do not use it. |
| created_at | String | Specifies the time when a backend server was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). 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 a 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. Values: <ul style="list-style-type: none">● ip: IP as backend servers● instance: ECSs used as backend servers |
| instance_id | String | Specifies the ID of the ECS used as the backend server. If this parameter is left blank, the backend server is not an ECS. For example, it may be an IP address. |

Table 4-318 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. The value can be one of the following: <ul style="list-style-type: none"> ● ONLINE: The backend server is running normally. ● NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs. ● OFFLINE: The cloud server used as the backend server is stopped or does not exist. |

Table 4-319 ResourceID

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the resource ID. |

Example Requests

Querying details of a backend server

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

Example Responses

Status code: 200

Successful request.

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

Status Codes

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

Error Codes

See [Error Codes](#).

4.10.4 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 4-320 Path Parameters

| Parameter | Mandatory | Type | Description |
|------------|-----------|--------|---|
| member_id | Yes | String | Specifies the backend server ID. Note: The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that has already associated with the load balancer. |
| pool_id | Yes | String | Specifies the ID of the backend server group. |
| project_id | Yes | String | Specifies the project ID. |

Request Parameters

Table 4-321 Request header parameters

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

Table 4-322 Request body parameters

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

Table 4-323 UpdateMemberOption

| Parameter | Mandatory | Type | Description |
|----------------|-----------|---------|---|
| admin_state_up | No | Boolean | Specifies the administrative status of the backend server. Although this parameter can be used in the APIs for creating and updating backend servers, its actual value depends on whether cloud servers exist. If cloud servers exist, the value is true . Otherwise, the value is false . This parameter is unsupported. Please do not use it. |
| name | No | String | Specifies the backend server name. Minimum: 0 Maximum: 255 |
| weight | No | Integer | Specifies the weight of the backend server. Requests are routed to backend servers in the same backend server group based on their weights. The value ranges from 0 to 100 , and the default value is 1 . The larger the weight is, the higher proportion of requests the backend server receives. If the weight is set to 0, the backend server will not accept new requests. If lb_algorithm is set to SOURCE_IP , this parameter will not take effect. Minimum: 0 Maximum: 100 |

| Parameter | Mandatory | Type | Description |
|---------------|-----------|---------|---|
| protocol_port | No | Integer | Specifies the port used by the backend server to receive requests. NOTE This parameter cannot be updated if any_port_enable is set to true for a backend server group. Minimum: 1 Maximum: 65535 |

Response Parameters

Status code: 200

Table 4-324 Response body parameters

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

Table 4-325 Member

| Parameter | Type | Description |
|------------|--------|---|
| id | String | Specifies the backend server ID. Note: The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that has already associated with the load balancer. |
| name | String | Specifies the backend server name. Note: The name is not an ECS name. |
| project_id | String | Specifies the project ID of the backend server. |
| pool_id | String | Specifies the ID of the backend server group to which the backend server belongs. This parameter is unsupported. Please do not use it. |

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

| Parameter | Type | Description |
|------------------|--------------------------------------|---|
| address | String | <p>Specifies the private IP address bound to the backend server.</p> <ul style="list-style-type: none"> • If subnet_cidr_id is left blank, IP as a Backend is enabled. In this case, the IP address must be an IPv4 address. • If subnet_cidr_id is not left blank, the IP address can be IPv4 or IPv6. It must be in the subnet specified by subnet_cidr_id and can only be bound to the primary NIC of the backend server. |
| ip_version | String | <p>Specifies the IP version supported by the backend server. The value can be v4 (IPv4) or v6 (IPv6), depending on the value of address returned by the system.</p> |
| device_owner | String | <p>Specifies whether the backend server is associated with an ECS.</p> <ul style="list-style-type: none"> • If this parameter is left blank, the backend server is not associated with an ECS. • If the value is compute:{az_name}, the backend server is associated with an ECS. {az_name} indicates the AZ where the ECS resides. <p>This parameter is unsupported. Please do not use it.</p> |
| device_id | String | <p>Specifies the ID of the ECS with which the backend server is associated. If this parameter is left blank, the backend server is not associated with an ECS.</p> <p>This parameter is unsupported. Please do not use it.</p> |
| operating_status | String | <p>Specifies the health status of the backend server if listener_id under status is not specified. The value can be one of the following:</p> <ul style="list-style-type: none"> • ONLINE: The backend server is running normally. • NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs. • OFFLINE: The cloud server used as the backend server is stopped or does not exist. |
| status | Array of MemberStatus objects | <p>Specifies the health status of the backend server if listener_id is specified.</p> |

| Parameter | Type | Description |
|-----------------|---|--|
| loadbalancer_id | String | Specifies the ID of the load balancer with which the backend server is associated. This parameter is unsupported. Please do not use it. |
| loadbalancers | Array of ResourceID objects | Specifies the IDs of the load balancers associated with the backend server. This parameter is unsupported. Please do not use it. |
| created_at | String | Specifies the time when a backend server was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). 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 a 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. Values: <ul style="list-style-type: none">● ip: IP as backend servers● instance: ECSs used as backend servers |
| instance_id | String | Specifies the ID of the ECS used as the backend server. If this parameter is left blank, the backend server is not an ECS. For example, it may be an IP address. |

Table 4-326 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. The value can be one of the following: <ul style="list-style-type: none"> ● ONLINE: The backend server is running normally. ● NO_MONITOR: No health check is configured for the backend server group to which the backend server belongs. ● OFFLINE: The cloud server used as the backend server is stopped or does not exist. |

Table 4-327 ResourceID

| Parameter | Type | Description |
|-----------|--------|----------------------------|
| id | String | Specifies the resource ID. |

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 4-328 Path Parameters

| Parameter | Mandatory | Type | Description |
|------------|-----------|--------|---|
| project_id | Yes | String | Specifies the project ID. |
| pool_id | Yes | String | Specifies the ID of the backend server group. |
| member_id | Yes | String | Specifies the backend server ID. NOTE The value of this parameter is not the ID of the server but an ID automatically generated for the backend server that has already associated with the load balancer. You can call the API for querying backend servers to obtain the backend server ID. |

Request Parameters

Table 4-329 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 4-330 Path Parameters

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

Request Parameters

Table 4-331 Request header parameters

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

Table 4-332 Request body parameters

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

Table 4-333 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 . |

| Parameter | Mandatory | Type | Description |
|----------------|-----------|--------|---|
| domain_name | No | String | <p>Specifies the domain name that HTTP requests are sent to during the health check.</p> <p>The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter.</p> <p>The value 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.</p> <p>Minimum: 1 Maximum: 100</p> |
| expected_codes | No | String | <p>Specifies the expected HTTP status code. This parameter will take effect only when type is set to HTTP or HTTPS.</p> <p>The value options are as follows:</p> <ul style="list-style-type: none"> • A specific value, for example, 200 • A list of values that are separated with commas (,), for example, 200, 202 • A value range, for example, 200-204 <p>The default value is 200. Multiple status codes can be queried in the format of <i>expected_codes=xxx&expected_codes=xxx</i>.</p> <p>Minimum: 1 Maximum: 64</p> |

| Parameter | Mandatory | Type | Description |
|------------------|-----------|---------|--|
| http_method | No | String | <p>Specifies the HTTP method. The value can be GET, HEAD, POST, PUT, DELETE, TRACE, OPTIONS, CONNECT, or PATCH. The default value is GET.</p> <p>This parameter is available when type is set to HTTP or HTTPS.</p> <p>This parameter is unsupported. Please do not use it.</p> <p>Minimum: 1 Maximum: 16</p> |
| max_retries | Yes | Integer | <p>Specifies the number of consecutive health checks when the health check result of a backend server changes from OFFLINE to ONLINE.</p> <p>The value ranges from 1 to 10.</p> <p>Minimum: 1 Maximum: 10</p> |
| 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> <p>Minimum: 1 Maximum: 10</p> |
| monitor_port | No | Integer | <p>Specifies the port used for the health check. If this parameter is left blank, a port of the backend server will be used by default. The port number ranges from 1 to 65535.</p> <p>NOTE This parameter is mandatory when Forward to Same Port is enabled for the associated backend server group.</p> <p>Minimum: 1 Maximum: 65535</p> |

| Parameter | Mandatory | Type | Description |
|------------|-----------|---------|--|
| name | No | String | Specifies the health check name. Minimum: 0 Maximum: 255 |
| pool_id | Yes | String | Specifies the ID of the backend server group for which the health check is configured. |
| project_id | No | String | Specifies the project ID. Minimum: 1 Maximum: 32 |
| timeout | Yes | Integer | Specifies the maximum time required for waiting for a response from the health check, in seconds. It is recommended that you set the value less than that of parameter delay . Minimum: 1 Maximum: 50 |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| type | Yes | String | <p>Specifies the health check protocol. The value can be TCP, UDP_CONNECT, HTTP, or HTTPS.</p> <p>Note:</p> <ul style="list-style-type: none">• If the protocol of the backend server group is QUIC, the value can only be UDP_CONNECT.• If the protocol of the backend server group is UDP, the value can only be UDP_CONNECT.• If the protocol of the backend server group is TCP, the value can only be TCP, HTTP, or HTTPS.• If the protocol of the backend server group is HTTP, the value can only be TCP, HTTP, or HTTPS.• If the protocol of the backend server group is HTTPS, the value can only be TCP, HTTP, or HTTPS. |
| url_path | No | String | <p>Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /. The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set <code>_~!()*[]@\$^: ',+.</code></p> <p>Note: This parameter is available only when type is set to HTTP or HTTPS.</p> <p>Default: /</p> <p>Minimum: 1</p> <p>Maximum: 80</p> |

Response Parameters

Status code: 201

Table 4-334 Response body parameters

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

Table 4-335 HealthMonitor

| Parameter | Type | Description |
|----------------|---------|--|
| admin_state_up | Boolean | Specifies the administrative status of the health check. <ul style="list-style-type: none">• true (default) indicates that the health check is enabled.• false indicates that the health check is disabled. |
| delay | Integer | Specifies the interval between health checks, in seconds. The value ranges from 1 to 50 . Minimum: 1 Maximum: 50 |
| domain_name | String | Specifies the domain name that HTTP requests are sent to during the health check. The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter. The value is left blank by default, indicating that the virtual IP address of the load balancer is used as the destination address of HTTP requests. This parameter is available only when type is set to HTTP . |
| expected_codes | String | Specifies the expected HTTP status code. This parameter will take effect only when type is set to HTTP or HTTPS . 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 | Type | Description |
|-----------------|--|--|
| http_method | String | Specifies the HTTP method. The value can be GET , HEAD , POST , PUT , DELETE , TRACE , OPTIONS , CONNECT , or PATCH . The default value is GET . This parameter is available when type is set to HTTP or HTTPS . This parameter is unsupported. Please do not use it. |
| id | String | Specifies the health check ID. |
| max_retries | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from OFFLINE to ONLINE . The value ranges from 1 to 10 Minimum: 1 Maximum: 10 |
| max_retries_own | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from ONLINE to OFFLINE . The value ranges from 1 to 10 , and the default value is 3 . Minimum: 1 Maximum: 10 |
| monitor_port | Integer | Specifies the port used for the health check. If this parameter is left blank, a port of the backend server will be used by default. The port number ranges from 1 to 65535. Minimum: 1 Maximum: 65535 |
| name | String | Specifies the health check name. |
| pools | Array of PoolRef objects | Lists the IDs of backend server groups for which the health check is configured. Only one ID will be returned. |
| project_id | String | Specifies the project ID. |
| timeout | Integer | Specifies the maximum time required for waiting for a response from the health check, in seconds. It is recommended that you set the value less than that of parameter delay . Minimum: 1 Maximum: 50 |

| Parameter | Type | Description |
|------------|--------|---|
| type | String | <p>Specifies the health check protocol. The value can be TCP, UDP_CONNECT, HTTP, or HTTPS.</p> <p>Note:</p> <ul style="list-style-type: none"> • If the protocol of the backend server group is QUIC, the value can only be UDP_CONNECT. • If the protocol of the backend server group is UDP, the value can only be UDP_CONNECT. • If the protocol of the backend server group is TCP, the value can only be TCP, HTTP, or HTTPS. • If the protocol of the backend server group is HTTP, the value can only be TCP, HTTP, or HTTPS. • If the protocol of the backend server group is HTTPS, the value can only be TCP, HTTP, or HTTPS. |
| url_path | String | <p>Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /. The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set <code>_~!()*[]@\$^: ',+.</code></p> <p>Note: This parameter is available only when type is set to HTTP or HTTPS.</p> |
| created_at | String | <p>Specifies the time when the health check was configured. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p> <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 health check 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 4-336 PoolRef

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

Example Requests

Configuring a health check whose protocol is HTTP

```
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 4-337 Path Parameters

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

Table 4-338 Query Parameters

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

| Parameter | Mandatory | Type | Description |
|--------------|-----------|---------|---|
| limit | No | Integer | Specifies the number of records on each page. Minimum: 0 Maximum: 2000 Default: 2000 |
| page_reverse | No | Boolean | Specifies whether to use reverse query. Values: <ul style="list-style-type: none"> • true: Query the previous page. • false (default): Query the next page. Note: <ul style="list-style-type: none"> • This parameter must be used together with limit. • If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker. |
| id | No | Array | Specifies the health check ID. Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i> . |
| monitor_port | No | Array | Specifies the port used for the health check. Multiple ports can be queried in the format of <i>monitor_port=xxx&monitor_port=xxx</i> . |
| domain_name | No | Array | Specifies the domain name to which HTTP requests are sent during the health check. The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter. Multiple domain names can be queried in the format of <i>domain_name=xxx&domain_name=xxx</i> . |

| Parameter | Mandatory | Type | Description |
|------------------|-----------|---------|---|
| name | No | Array | Specifies the health check name. Multiple names can be queried in the format of <i>name=xxx&name=xxx</i> . |
| delay | No | Array | Specifies the interval between health checks, in seconds. The value ranges from 1 to 50 . Multiple intervals can be queried in the format of <i>delay=xxx&delay=xxx</i> . |
| max_retries | No | Array | Specifies the number of consecutive health checks when the health check result of a backend server changes from OFFLINE to ONLINE . Multiple values can be queried in the format of <i>max_retries=xxx&max_retries=xxx</i> . |
| admin_state_up | No | Boolean | Specifies the administrative status of the health check. The value can be true (health check is enabled) or false (health check is disabled). |
| max_retries_down | No | Array | Specifies the number of consecutive health checks when the health check result of a backend server changes from ONLINE to OFFLINE . The value ranges from 1 to 10 . Multiple values can be queried in the format of <i>max_retries_down=xxx&max_retries_down=xxx</i> . |
| timeout | No | Integer | Specifies the maximum time required for waiting for a response from the health check, in seconds. |

| Parameter | Mandatory | Type | Description |
|----------------|-----------|-------|---|
| type | No | Array | Specifies the health check protocol. The value can be TCP , UDP_CONNECT , HTTP , or HTTPS . Multiple protocols can be queried in the format of <i>type=xxx&type=xxx</i> . |
| expected_codes | No | Array | Specifies the expected HTTP status code. This parameter will take effect only when type is set to HTTP or HTTPS . 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> . |
| url_path | No | Array | 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 . Multiple paths can be queried in the format of <i>url_path=xxx&url_path=xxx</i> . |

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

Request Parameters

Table 4-339 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 4-340 Response body parameters

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

Table 4-341 PageInfo

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

Table 4-342 HealthMonitor

| Parameter | Type | Description |
|----------------|---------|--|
| admin_state_up | Boolean | Specifies the administrative status of the health check. <ul style="list-style-type: none">• true (default) indicates that the health check is enabled.• false indicates that the health check is disabled. |
| delay | Integer | Specifies the interval between health checks, in seconds. The value ranges from 1 to 50 . Minimum: 1 Maximum: 50 |

| 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.</p> |
| expected_codes | String | <p>Specifies the expected HTTP status code. This parameter will take effect only when type is set to HTTP or HTTPS.</p> <p>The value options are as follows:</p> <ul style="list-style-type: none">• A specific value, for example, 200• A list of values that are separated with commas (,), for example, 200, 202• A value range, for example, 200-204 <p>The default value is 200. Multiple status codes can be queried in the format of <i>expected_codes=xxx&expected_codes=xxx</i>.</p> |
| http_method | String | <p>Specifies the HTTP method. The value can be GET, HEAD, POST, PUT, DELETE, TRACE, OPTIONS, CONNECT, or PATCH. The default value is GET.</p> <p>This parameter is available when type is set to HTTP or HTTPS.</p> <p>This parameter is unsupported. Please do not use it.</p> |
| id | String | Specifies the health check ID. |
| 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> <p>Minimum: 1</p> <p>Maximum: 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 . Minimum: 1 Maximum: 10 |
| monitor_port | Integer | Specifies the port used for the health check. If this parameter is left blank, a port of the backend server will be used by default. The port number ranges from 1 to 65535. Minimum: 1 Maximum: 65535 |
| name | String | Specifies the health check name. |
| pools | Array of PoolRef objects | Lists the IDs of backend server groups for which the health check is configured. Only one ID will be returned. |
| project_id | String | Specifies the project ID. |
| timeout | Integer | Specifies the maximum time required for waiting for a response from the health check, in seconds. It is recommended that you set the value less than that of parameter delay . Minimum: 1 Maximum: 50 |

| Parameter | Type | Description |
|------------|--------|---|
| type | String | <p>Specifies the health check protocol. The value can be TCP, UDP_CONNECT, HTTP, or HTTPS.</p> <p>Note:</p> <ul style="list-style-type: none"> • If the protocol of the backend server group is QUIC, the value can only be UDP_CONNECT. • If the protocol of the backend server group is UDP, the value can only be UDP_CONNECT. • If the protocol of the backend server group is TCP, the value can only be TCP, HTTP, or HTTPS. • If the protocol of the backend server group is HTTP, the value can only be TCP, HTTP, or HTTPS. • If the protocol of the backend server group is HTTPS, the value can only be TCP, HTTP, or HTTPS. |
| url_path | String | <p>Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /. The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set <code>_~!()*[]@\$^: ',+.</code></p> <p>Note: This parameter is available only when type is set to HTTP or HTTPS.</p> |
| created_at | String | <p>Specifies the time when the health check was configured. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p> <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 health check 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 4-343 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 Details of a Health Check

Function

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

Calling Method

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

URI

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

Table 4-344 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 4-345 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 4-346 Response body parameters

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

Table 4-347 HealthMonitor

| Parameter | Type | Description |
|----------------|---------|--|
| admin_state_up | Boolean | Specifies the administrative status of the health check. <ul style="list-style-type: none">• true (default) indicates that the health check is enabled.• false indicates that the health check is disabled. |
| delay | Integer | Specifies the interval between health checks, in seconds. The value ranges from 1 to 50 . Minimum: 1 Maximum: 50 |
| domain_name | String | Specifies the domain name that HTTP requests are sent to during the health check. The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter. The value is left blank by default, indicating that the virtual IP address of the load balancer is used as the destination address of HTTP requests. This parameter is available only when type is set to HTTP . |
| expected_codes | String | Specifies the expected HTTP status code. This parameter will take effect only when type is set to HTTP or HTTPS . 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 | Type | Description |
|------------------|--|--|
| http_method | String | Specifies the HTTP method. The value can be GET , HEAD , POST , PUT , DELETE , TRACE , OPTIONS , CONNECT , or PATCH . The default value is GET . This parameter is available when type is set to HTTP or HTTPS . This parameter is unsupported. Please do not use it. |
| id | String | Specifies the health check ID. |
| max_retries | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from OFFLINE to ONLINE . The value ranges from 1 to 10 Minimum: 1 Maximum: 10 |
| max_retries_down | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from ONLINE to OFFLINE . The value ranges from 1 to 10 , and the default value is 3 . Minimum: 1 Maximum: 10 |
| monitor_port | Integer | Specifies the port used for the health check. If this parameter is left blank, a port of the backend server will be used by default. The port number ranges from 1 to 65535. Minimum: 1 Maximum: 65535 |
| name | String | Specifies the health check name. |
| pools | Array of PoolRef objects | Lists the IDs of backend server groups for which the health check is configured. Only one ID will be returned. |
| project_id | String | Specifies the project ID. |
| timeout | Integer | Specifies the maximum time required for waiting for a response from the health check, in seconds. It is recommended that you set the value less than that of parameter delay . Minimum: 1 Maximum: 50 |

| Parameter | Type | Description |
|------------|--------|---|
| type | String | <p>Specifies the health check protocol. The value can be TCP, UDP_CONNECT, HTTP, or HTTPS.</p> <p>Note:</p> <ul style="list-style-type: none"> • If the protocol of the backend server group is QUIC, the value can only be UDP_CONNECT. • If the protocol of the backend server group is UDP, the value can only be UDP_CONNECT. • If the protocol of the backend server group is TCP, the value can only be TCP, HTTP, or HTTPS. • If the protocol of the backend server group is HTTP, the value can only be TCP, HTTP, or HTTPS. • If the protocol of the backend server group is HTTPS, the value can only be TCP, HTTP, or HTTPS. |
| url_path | String | <p>Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /. The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set <code>_~!()*[]@\$^: ',+.</code></p> <p>Note: This parameter is available only when type is set to HTTP or HTTPS.</p> |
| created_at | String | <p>Specifies the time when the health check was configured. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p> <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 health check 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 4-348 PoolRef

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

Example Requests

Querying details of a health check

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

Example Responses

Status code: 200

Successful request.

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

Status Codes

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

Error Codes

See [Error Codes](#).

4.11.4 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 4-349 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 4-350 Request header parameters

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

Table 4-351 Request body parameters

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

Table 4-352 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 . Minimum: 1 Maximum: 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 . Minimum: 1 Maximum: 100 |

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

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

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| url_path | No | String | <p>Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /. The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set <code>_~!()*[]@\$^: ', +</code>.</p> <p>Note: This parameter is available only when type is set to HTTP or HTTPS.</p> <p>Minimum: 1 Maximum: 80</p> |
| type | No | String | <p>Specifies the health check protocol. The value can be TCP, UDP_CONNECT, HTTP, or HTTPS.</p> <p>Note:</p> <ul style="list-style-type: none">• If the protocol of the backend server group is QUIC, the value can only be UDP_CONNECT.• If the protocol of the backend server group is UDP, the value can only be UDP_CONNECT.• If the protocol of the backend server group is TCP, the value can only be TCP, HTTP, or HTTPS.• If the protocol of the backend server group is HTTP, the value can only be TCP, HTTP, or HTTPS.• If the protocol of the backend server group is HTTPS, the value can only be TCP, HTTP, or HTTPS. |

Response Parameters

Status code: 200

Table 4-353 Response body parameters

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

Table 4-354 HealthMonitor

| Parameter | Type | Description |
|----------------|---------|--|
| admin_state_up | Boolean | Specifies the administrative status of the health check. <ul style="list-style-type: none">• true (default) indicates that the health check is enabled.• false indicates that the health check is disabled. |
| delay | Integer | Specifies the interval between health checks, in seconds. The value ranges from 1 to 50 . Minimum: 1 Maximum: 50 |
| domain_name | String | Specifies the domain name that HTTP requests are sent to during the health check. The value can contain only digits, letters, hyphens (-), and periods (.) and must start with a digit or letter. The value is left blank by default, indicating that the virtual IP address of the load balancer is used as the destination address of HTTP requests. This parameter is available only when type is set to HTTP . |
| expected_codes | String | Specifies the expected HTTP status code. This parameter will take effect only when type is set to HTTP or HTTPS . 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 | Type | Description |
|-----------------|--|--|
| http_method | String | Specifies the HTTP method. The value can be GET , HEAD , POST , PUT , DELETE , TRACE , OPTIONS , CONNECT , or PATCH . The default value is GET . This parameter is available when type is set to HTTP or HTTPS . This parameter is unsupported. Please do not use it. |
| id | String | Specifies the health check ID. |
| max_retries | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from OFFLINE to ONLINE . The value ranges from 1 to 10 Minimum: 1 Maximum: 10 |
| max_retries_own | Integer | Specifies the number of consecutive health checks when the health check result of a backend server changes from ONLINE to OFFLINE . The value ranges from 1 to 10 , and the default value is 3 . Minimum: 1 Maximum: 10 |
| monitor_port | Integer | Specifies the port used for the health check. If this parameter is left blank, a port of the backend server will be used by default. The port number ranges from 1 to 65535. Minimum: 1 Maximum: 65535 |
| name | String | Specifies the health check name. |
| pools | Array of PoolRef objects | Lists the IDs of backend server groups for which the health check is configured. Only one ID will be returned. |
| project_id | String | Specifies the project ID. |
| timeout | Integer | Specifies the maximum time required for waiting for a response from the health check, in seconds. It is recommended that you set the value less than that of parameter delay . Minimum: 1 Maximum: 50 |

| Parameter | Type | Description |
|------------|--------|---|
| type | String | <p>Specifies the health check protocol. The value can be TCP, UDP_CONNECT, HTTP, or HTTPS.</p> <p>Note:</p> <ul style="list-style-type: none"> • If the protocol of the backend server group is QUIC, the value can only be UDP_CONNECT. • If the protocol of the backend server group is UDP, the value can only be UDP_CONNECT. • If the protocol of the backend server group is TCP, the value can only be TCP, HTTP, or HTTPS. • If the protocol of the backend server group is HTTP, the value can only be TCP, HTTP, or HTTPS. • If the protocol of the backend server group is HTTPS, the value can only be TCP, HTTP, or HTTPS. |
| url_path | String | <p>Specifies the HTTP request path for the health check. The value must start with a slash (/), and the default value is /. The value can contain letters, digits, hyphens (-), slashes (/), periods (.), percentage signs (%), question marks (?), pound signs (#), ampersand signs (&), and the extended character set <code>_~!()*[]@\$^: ',+.</code></p> <p>Note: This parameter is available only when type is set to HTTP or HTTPS.</p> |
| created_at | String | <p>Specifies the time when the health check was configured. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time).</p> <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 health check 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 4-355 PoolRef

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

Example Requests

Modifying the interval between health checks

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

```
{  
  "healthmonitor" : {  
    "name" : "My Healthmonitor update",  
    "max_retries" : 10,  
    "delay" : 10  
  }  
}
```

Example Responses

Status code: 200

Successful request.

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

Status Codes

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

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

Error Codes

See [Error Codes](#).

4.11.5 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 4-356 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 4-357 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 4-358 Path Parameters

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

Request Parameters

Table 4-359 Request header parameters

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

Table 4-360 Request body parameters

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

Table 4-361 CreateL7PolicyOption

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

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

| Parameter | Mandatory | Type | Description |
|-----------|-----------|---------|---|
| priority | No | Integer | <p>Specifies the forwarding policy priority. A smaller value indicates a higher priority. The value must be unique for each forwarding policy of the same listener.</p> <p>This parameter is available only for dedicated load balancers and will take effect when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <ul style="list-style-type: none">• If action is set to REDIRECT_TO_LISTENER, the value can only be 0, indicating that REDIRECT_TO_LISTENER has the highest priority.• If enhance_l7policy_enable is set to false, forwarding policies are automatically prioritized based on the original sorting logic. Forwarding policy priorities are independent of each other regardless of domain names. If forwarding policies use the same domain name, their priorities follow the order of exact match (EQUAL_TO), prefix match (STARTS_WITH), and regular expression match (REGEX). If prefix match is used for matching, the longer the path, the higher the priority. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default. |

| Parameter | Mandatory | Type | Description |
|------------|-----------|--------|---|
| | | | <ul style="list-style-type: none"> • If enhance_l7policy_enable is set to true and this parameter is not passed, the priority will set to a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. There will be two cases: <ul style="list-style-type: none"> a) If the highest priority of existing forwarding policies is the maximum (10,000), the forwarding policy will fail to create because the final priority for creating the forwarding policy is the sum of 1 and 10,000, which exceeds the maximum. In this case, please specify a value or adjust the priorities of existing forwarding policies. b) If no forwarding policies exist, the highest priority of existing forwarding policies will be set to 1 by default. <p>For shared load balancers, this parameter is unsupported. Minimum: 0 Maximum: 10000</p> |
| project_id | No | String | <p>Specifies the ID of the project where the forwarding policy is used.</p> <p>Minimum: 1 Maximum: 32</p> |

| Parameter | Mandatory | Type | Description |
|----------------------|-----------|--------|---|
| redirect_listener_id | No | String | <p>Specifies the ID of the listener to which requests are redirected. This parameter is mandatory when action is set to REDIRECT_TO_LISTENER.</p> <p>Note:</p> <ul style="list-style-type: none"> • The listener's protocol must be HTTPS. • A listener added to another load balancer is not allowed. • This parameter cannot be passed in the API for adding or updating a forwarding policy if action is set to REDIRECT_TO_POOL. • 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. This parameter is valid only when action is set to REDIRECT_TO_POOL.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter cannot be specified when action is set to REDIRECT_TO_LISTENER. |
| redirect_url | No | String | <p>Specifies the URL to which requests are forwarded.</p> <p>Format: <i>protocol://host:port/path?query</i></p> <p>Minimum: 1</p> <p>Maximum: 255</p> |

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

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

Table 4-362 CreateRedirectUrlConfig

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| protocol | No | String | <p>Specifies the protocol for redirection.</p> <p>The value can be HTTP, HTTPS, or `\${protocol}`. The default value is `\${protocol}`, indicating that the protocol of the request will be used.</p> <p>Default: `\${protocol}`</p> <p>Minimum: 1</p> <p>Maximum: 36</p> |
| host | No | String | <p>Specifies the host name that requests are redirected to. The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. The default value is `\${host}`, indicating that the host of the request will be used.</p> <p>Default: `\${host}`</p> <p>Minimum: 1</p> <p>Maximum: 128</p> |
| port | No | String | <p>Specifies the port that requests are redirected to. The default value is `\${port}`, indicating that the port of the request will be used.</p> <p>Default: `\${port}`</p> <p>Minimum: 1</p> <p>Maximum: 16</p> |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| path | No | String | <p>Specifies the path that requests are redirected to. The default value is #{path}, indicating that the path of the request will be used.</p> <p>The value can contain only letters, digits, and special characters <code>_~';@^-%#&\$.+?=:/()[]{} </code> and must start with a slash (<code>/</code>). <code>\$1</code> and <code>\$2</code> match the wildcard asterisk (<code>*</code>) in the request URL.</p> <p>Default: #{path} Minimum: 1 Maximum: 128</p> |
| query | No | String | <p>Specifies the query string set in the URL for redirection. The default value is #{query}, indicating that the query string of the request will be used.</p> <p>For example, in the URL https://www.example.com:8080/elb?type=loadbalancer, #{query} indicates type=loadbalancer. If this parameter is set to #{query}&name=my_name, the URL will be redirected to https://www.example.com:8080/elb?type=loadbalancer&name=my_name.</p> <p>The value is case-sensitive and can contain only letters, digits, and special characters <code>!\$&'()*+,-./:;=?@^_` </code> <code>\$1</code> and <code>\$2</code> match the wildcard asterisk (<code>*</code>) in the request URL.</p> <p>Default: #{query} Minimum: 0 Maximum: 128</p> |

| Parameter | Mandatory | Type | Description |
|-------------|-----------|--------|--|
| status_code | Yes | String | Specifies the status code returned after the requests are redirected. The value can be 301 , 302 , 303 , 307 , or 308 . Minimum: 1 Maximum: 16 |

Table 4-363 CreateFixedResponseConfig

| Parameter | Mandatory | Type | Description |
|--------------|-----------|--------|--|
| status_code | Yes | String | Specifies the fixed HTTP status code configured in the forwarding rule. The value can be any integer in the range of 200–299, 400–499, or 500–599. Minimum: 1 Maximum: 16 |
| content_type | No | String | Specifies the format of the response body. The value can be text/plain , text/css , text/html , application/javascript , or application/json . The default value is text/plain . Minimum: 0 Maximum: 32 |
| message_body | No | String | Specifies the content of the response message body. Minimum: 0 Maximum: 1024 |

Table 4-364 CreateRedirectPoolsExtendConfig

| Parameter | Mandatory | Type | Description |
|--------------------|-----------|---------|---|
| rewrite_url_enable | No | Boolean | Specifies whether to set rewrite_url_enable to true . |

| Parameter | Mandatory | Type | Description |
|--------------------|-----------|-------------------------------|--|
| rewrite_url_config | No | CreateRewriteUrlConfig object | This parameter is mandatory when rewrite_url_enable is set to true . |

Table 4-365 CreateRewriteUrlConfig

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

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| query | No | String | Specifies the query string set in the URL for redirection. The default value is #{query} , indicating that the query string of the request will be used. The value is case-sensitive and can contain only letters, digits, and special characters <code>!\$&'()*+,-./:;=?@^_`{ }~</code> . <i>\$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk () in the request URL. If the number of regular expression match groups is less than the specified number, #{path} is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, \$abc#123, and the matching result is #123. If the dollar sign (\$) is followed by a special character, for example, \$#, the matching result is #.</i> |

Table 4-366 CreateL7PolicyRuleOption

| Parameter | Mandatory | Type | Description |
|----------------|-----------|---------|---|
| admin_state_up | No | Boolean | Specifies the administrative status of the forwarding rule. The value can be true or false , and the default value is true . This parameter is unsupported. Please do not use it. Default: true |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| type | Yes | String | <p>Specifies the type of the forwarding rule. The value can be one of the following:</p> <ul style="list-style-type: none"> • HOST_NAME: A domain name will be used for matching. • PATH: A URL will be used for matching. • METHOD: An HTTP request method will be used for matching. • HEADER: The request header will be used for matching. • QUERY_STRING: A query string will be used for matching. • SOURCE_IP: The source IP address will be used for matching. <p>If type is set to HOST_NAME, PATH, METHOD, and SOURCE_IP, only one forwarding rule can be created for each type. If type is set to HEADER and QUERY_STRING, multiple forwarding rules can be created for each type.</p> |

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

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

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

Table 4-367 CreateRuleCondition

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

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| value | Yes | String | <p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (), <i>and must start with a letter, digit, or asterisk (^)</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~!;@^-%#&\$.*+? ,=!: /() [] {}</code> If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. If type is set to QUERY_STRING, key indicates the name of the |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|------|---|
| | | | <p>query parameter, and value indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({}), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character.</p> <ul style="list-style-type: none"> • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value indicates the source IP address of the request. The value is an IPv4 or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.] <p>All values of the condition list in a forwarding rule must be unique.</p> <p>Minimum: 1 Maximum: 128</p> |

Response Parameters

Status code: 201

Table 4-368 Response body parameters

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

Table 4-369 L7Policy

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

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

| Parameter | Type | Description |
|-----------|---------|--|
| priority | Integer | <p>Specifies the forwarding policy priority. A smaller value indicates a higher priority. The value must be unique for each forwarding policy of the same listener.</p> <p>This parameter is available only for dedicated load balancers and will take effect when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <ul style="list-style-type: none"> • If action is set to REDIRECT_TO_LISTENER, the value can only be 0, indicating that REDIRECT_TO_LISTENER has the highest priority. • If enhance_l7policy_enable is set to false, forwarding policies are automatically prioritized based on the original sorting logic. Forwarding policy priorities are independent of each other regardless of domain names. If forwarding policies use the same domain name, their priorities follow the order of exact match (EQUAL_TO), prefix match (STARTS_WITH), and regular expression match (REGEX). If prefix match is used for matching, the longer the path, the higher the priority. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default. • If enhance_l7policy_enable is set to true and this parameter is not passed, the priority will set to a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. There will be two cases: <ul style="list-style-type: none"> a) If the highest priority of existing forwarding policies is the maximum (10,000), the forwarding policy will fail to create because the final priority for creating the forwarding policy is the sum of 1 and 10,000, which exceeds the maximum. In this case, please specify a value or adjust the priorities of existing forwarding policies. b) If no forwarding policies exist, the highest priority of existing forwarding policies will be set to 1 by default. |

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

| Parameter | Type | Description |
|------------------------------|--|---|
| redirect_url_config | RedirectUrlConfig object | <p>Specifies the URL to which requests are forwarded.</p> <p>For dedicated load balancers, this parameter will take effect only when advanced forwarding is enabled (enhance_l7policy_enable is set to true). If it is passed when enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to REDIRECT_TO_URL. It cannot be specified if the value of action is not REDIRECT_TO_URL.</p> <p>Format: <i>protocol://host:port/path?query</i></p> <p>At least one of the four parameters (protocol, host, port, and path) must be passed, or their values cannot be set to \${xxx} at the same time. (\${xxx} indicates that the value in the request will be inherited. For example, \${host} indicates the host in the URL to be redirected.) 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. For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.</p> |
| redirect_pools_extend_config | RedirectPoolsExtendConfig object | <p>Specifies the backend server group that the requests are forwarded to. This parameter is valid only when action is set to REDIRECT_TO_POOL.</p> |
| fixed_response_config | FixedResponseConfig object | <p>Specifies the configuration of the page that will be returned. This parameter will take effect when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to FIXED_RESPONSE. It cannot be specified if the value of action is not FIXED_RESPONSE.</p> <p>For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.</p> |

| Parameter | Type | Description |
|------------|--------|---|
| 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. |

Table 4-370 RuleRef

| Parameter | Type | Description |
|-----------|--------|-----------------------------------|
| id | String | Specifies the forwarding rule ID. |

Table 4-371 RedirectUrlConfig

| Parameter | Type | Description |
|-----------|--------|---|
| protocol | String | Specifies the protocol for redirection. The value can be HTTP , HTTPS , or \${protocol} . The default value is \${protocol} , indicating that the protocol of the request will be used. Minimum: 1 Maximum: 36 |
| host | String | Specifies the host name that requests are redirected to. The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. The default value is \${host} , indicating that the host of the request will be used. Default: \${host} Minimum: 1 Maximum: 128 |

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

Table 4-372 RedirectPoolsExtendConfig

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

Table 4-373 RewriteUrlConfig

| Parameter | Type | Description |
|-----------|--------|---|
| host | String | url host |
| path | String | Specifies the URL path. |
| query | String | Specifies the URL query character string. |

Table 4-374 FixedResponseConfig

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

Example Requests

Creating a redirection for a listener.

```
POST https://{ELB_Endpoint}/v3/99a3fff0d03c428eac3678da6a7d0f24/elb/l7policies
```



```
{
  "l7policy": {
    "action": "REDIRECT_TO_LISTENER",
    "listener_id": "e2220d2a-3faf-44f3-8cd6-0c42952bd0ab",
    "redirect_listener_id": "48a97732-449e-4aab-b561-828d29e45050"
  }
}
```

Example Responses

Status code: 201

Normal response to POST requests.

```
{
  "request_id": "b60d1d9a-5263-45b0-b1d6-2810ac7c52a1",
  "l7policy": {
    "redirect_pool_id": "768e9e8c-e7cb-4fef-b24b-af9399d2bb240",
    "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,
    "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 4-375 Path Parameters

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

Table 4-376 Query Parameters

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

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

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

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

| Parameter | Mandatory | Type | Description |
|---------------------|-----------|---------|--|
| provisioning_status | No | Array | 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. <ul style="list-style-type: none">• true: Details about the forwarding rule are displayed.• false: Only the rule ID is displayed. |
| priority | No | Array | 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 4-377 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 4-378 Response body parameters

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

Table 4-379 PageInfo

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

Table 4-380 L7Policy

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

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

| Parameter | Type | Description |
|-----------|---------|--|
| priority | Integer | <p>Specifies the forwarding policy priority. A smaller value indicates a higher priority. The value must be unique for each forwarding policy of the same listener.</p> <p>This parameter is available only for dedicated load balancers and will take effect when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <ul style="list-style-type: none"> • If action is set to REDIRECT_TO_LISTENER, the value can only be 0, indicating that REDIRECT_TO_LISTENER has the highest priority. • If enhance_l7policy_enable is set to false, forwarding policies are automatically prioritized based on the original sorting logic. Forwarding policy priorities are independent of each other regardless of domain names. If forwarding policies use the same domain name, their priorities follow the order of exact match (EQUAL_TO), prefix match (STARTS_WITH), and regular expression match (REGEX). If prefix match is used for matching, the longer the path, the higher the priority. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default. • If enhance_l7policy_enable is set to true and this parameter is not passed, the priority will set to a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. There will be two cases: <ul style="list-style-type: none"> a) If the highest priority of existing forwarding policies is the maximum (10,000), the forwarding policy will fail to create because the final priority for creating the forwarding policy is the sum of 1 and 10,000, which exceeds the maximum. In this case, please specify a value or adjust the priorities of existing forwarding policies. b) If no forwarding policies exist, the highest priority of existing forwarding policies will be set to 1 by default. |

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

| Parameter | Type | Description |
|------------------------------|--|---|
| redirect_url_config | RedirectUrlConfig object | <p>Specifies the URL to which requests are forwarded.</p> <p>For dedicated load balancers, this parameter will take effect only when advanced forwarding is enabled (enhance_l7policy_enable is set to true). If it is passed when enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to REDIRECT_TO_URL. It cannot be specified if the value of action is not REDIRECT_TO_URL.</p> <p>Format: <i>protocol://host:port/path?query</i></p> <p>At least one of the four parameters (protocol, host, port, and path) must be passed, or their values cannot be set to \${xxx} at the same time. (\${xxx} indicates that the value in the request will be inherited. For example, \${host} indicates the host in the URL to be redirected.) 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. For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.</p> |
| redirect_pools_extend_config | RedirectPoolsExtendConfig object | <p>Specifies the backend server group that the requests are forwarded to. This parameter is valid only when action is set to REDIRECT_TO_POOL.</p> |
| fixed_response_config | FixedResponseConfig object | <p>Specifies the configuration of the page that will be returned. This parameter will take effect when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to FIXED_RESPONSE. It cannot be specified if the value of action is not FIXED_RESPONSE.</p> <p>For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.</p> |

| Parameter | Type | Description |
|------------|--------|---|
| 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. |

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} . The default value is \${protocol} , indicating that the protocol of the request will be used. Minimum: 1 Maximum: 36 |
| host | String | Specifies the host name that requests are redirected to. The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. The default value is \${host} , indicating that the host of the request will be used. Default: \${host} Minimum: 1 Maximum: 128 |

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

Table 4-383 RedirectPoolsExtendConfig

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

Table 4-384 RewriteUrlConfig

| Parameter | Type | Description |
|-----------|--------|---|
| host | String | url host |
| path | String | Specifies the URL path. |
| query | String | Specifies the URL query character string. |

Table 4-385 FixedResponseConfig

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

Example Requests

Querying forwarding policies

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

Example Responses

Status code: 200

Successful request.

```
{
  "request_id": "d3c67339-be91-4813-bb24-85728a5d326a",
  "l7policies": [ {
    "redirect_pool_id": "768e9e8c-e7cb-4fef-b24b-af9399dbb240",
    "description": "",
    "admin_state_up": true,
    "rules": [ {
      "id": "c5c2d625-676b-431e-a4c7-c59cc2664881"
    } ],
    "project_id": "7a9941d34fc1497d8d0797429ecfd354",
    "listener_id": "cdb03a19-16b7-4e6b-bfec-047aeec74f56",
    "redirect_url": null,
    "redirect_url_config": null,
    "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,
    "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 Viewing Details of a Forwarding Policy

Function

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

Calling Method

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

URI

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

Table 4-386 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 4-387 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 4-388 Response body parameters

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

Table 4-389 L7Policy

| Parameter | Type | Description |
|----------------|---------|---|
| action | String | <p>Specifies where requests will be forwarded. The value can be one of the following:</p> <ul style="list-style-type: none">● REDIRECT_TO_POOL: Requests will be forwarded to another backend server group.● REDIRECT_TO_LISTENER: Requests will be redirected to an HTTPS listener. <p>REDIRECT_TO_LISTENER has the highest priority. If requests are to be redirected to an HTTPS listener, other forwarding policies of the listener will become invalid.</p> <p>Note:</p> <ul style="list-style-type: none">● If action is set to REDIRECT_TO_POOL, the listener's protocol must be HTTP, HTTPS, or TERMINATED_HTTPS.● If action is set to REDIRECT_TO_LISTENER, the listener's protocol must be HTTP. |
| admin_state_up | Boolean | <p>Specifies the administrative status of the forwarding policy. The default value is true.</p> <p>This parameter is unsupported. Please do not use it.</p> |
| description | String | <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> <p>Minimum: 1 Maximum: 255</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> <p>Minimum: 1 Maximum: 100</p> |

| Parameter | Type | Description |
|-----------|---------|---|
| priority | Integer | <p>Specifies the forwarding policy priority. A smaller value indicates a higher priority. The value must be unique for each forwarding policy of the same listener.</p> <p>This parameter is available only for dedicated load balancers and will take effect when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <ul style="list-style-type: none">• If action is set to REDIRECT_TO_LISTENER, the value can only be 0, indicating that REDIRECT_TO_LISTENER has the highest priority.• If enhance_l7policy_enable is set to false, forwarding policies are automatically prioritized based on the original sorting logic. Forwarding policy priorities are independent of each other regardless of domain names. If forwarding policies use the same domain name, their priorities follow the order of exact match (EQUAL_TO), prefix match (STARTS_WITH), and regular expression match (REGEX). If prefix match is used for matching, the longer the path, the higher the priority. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default.• If enhance_l7policy_enable is set to true and this parameter is not passed, the priority will set to a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. There will be two cases:<ol style="list-style-type: none">a) If the highest priority of existing forwarding policies is the maximum (10,000), the forwarding policy will fail to create because the final priority for creating the forwarding policy is the sum of 1 and 10,000, which exceeds the maximum. In this case, please specify a value or adjust the priorities of existing forwarding policies.b) If no forwarding policies exist, the highest priority of existing forwarding policies will be set to 1 by default. |

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

| Parameter | Type | Description |
|------------------------------|--|---|
| redirect_url_config | RedirectUrlConfig object | <p>Specifies the URL to which requests are forwarded.</p> <p>For dedicated load balancers, this parameter will take effect only when advanced forwarding is enabled (enhance_l7policy_enable is set to true). If it is passed when enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to REDIRECT_TO_URL. It cannot be specified if the value of action is not REDIRECT_TO_URL.</p> <p>Format: <i>protocol://host:port/path?query</i></p> <p>At least one of the four parameters (protocol, host, port, and path) must be passed, or their values cannot be set to \${xxx} at the same time. (\${xxx} indicates that the value in the request will be inherited. For example, \${host} indicates the host in the URL to be redirected.) 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. For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.</p> |
| redirect_pools_extend_config | RedirectPoolsExtendConfig object | <p>Specifies the backend server group that the requests are forwarded to. This parameter is valid only when action is set to REDIRECT_TO_POOL.</p> |
| fixed_response_config | FixedResponseConfig object | <p>Specifies the configuration of the page that will be returned. This parameter will take effect when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to FIXED_RESPONSE. It cannot be specified if the value of action is not FIXED_RESPONSE.</p> <p>For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.</p> |

| Parameter | Type | Description |
|------------|--------|---|
| 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. |

Table 4-390 RuleRef

| Parameter | Type | Description |
|-----------|--------|-----------------------------------|
| id | String | Specifies the forwarding rule ID. |

Table 4-391 RedirectUrlConfig

| Parameter | Type | Description |
|-----------|--------|---|
| protocol | String | Specifies the protocol for redirection. The value can be HTTP , HTTPS , or \${protocol} . The default value is \${protocol} , indicating that the protocol of the request will be used. Minimum: 1 Maximum: 36 |
| host | String | Specifies the host name that requests are redirected to. The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. The default value is \${host} , indicating that the host of the request will be used. Default: \${host} Minimum: 1 Maximum: 128 |

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

Table 4-392 RedirectPoolsExtendConfig

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

Table 4-393 RewriteUrlConfig

| Parameter | Type | Description |
|-----------|--------|---|
| host | String | url host |
| path | String | Specifies the URL path. |
| query | String | Specifies the URL query character string. |

Table 4-394 FixtedResponseConfig

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

Example Requests

Querying details of a forwarding policy

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

Example Responses

Status code: 200

Successful request.

```
{
  "l7policy" : {
    "redirect_pool_id" : "768e9e8c-e7cb-4fef-b24b-af9399dbb240",
    "description" : "",
    "admin_state_up" : true,
    "rules" : [ {
      "id" : "c5c2d625-676b-431e-a4c7-c59cc2664881"
    } ],
    "project_id" : "7a9941d34fc1497d8d0797429ecfd354",
    "listener_id" : "cdb03a19-16b7-4e6b-bfec-047aeec74f56",
    "redirect_url" : null,
    "redirect_url_config" : null,
    "fixed_response_config" : null,
    "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 Updating a Forwarding Policy

Function

This API is used to update a forwarding policy.

Calling Method

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

URI

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


Table 4-395 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 4-396 Request header parameters

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

Table 4-397 Request body parameters

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

Table 4-398 UpdateL7PolicyOption

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

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

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

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

| Parameter | Mandatory | Type | Description |
|-----------|-----------|---------|---|
| priority | No | Integer | <p>Specifies the forwarding policy priority. A smaller value indicates a higher priority. The value must be unique for each forwarding policy of the same listener.</p> <p>This parameter is available only for dedicated load balancers and will take effect when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <ul style="list-style-type: none">• If action is set to REDIRECT_TO_LISTENER, the value can only be 0, indicating that REDIRECT_TO_LISTENER has the highest priority.• If enhance_l7policy_enable is set to false, forwarding policies are automatically prioritized based on the original sorting logic. Forwarding policy priorities are independent of each other regardless of domain names. If forwarding policies use the same domain name, their priorities follow the order of exact match (EQUAL_TO), prefix match (STARTS_WITH), and regular expression match (REGEX). If prefix match is used for matching, the longer the path, the higher the priority. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default. |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|------|--|
| | | | <ul style="list-style-type: none"> If enhance_l7policy_enable is set to true and this parameter is not passed, the priority will set to a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. There will be two cases: <ol style="list-style-type: none"> If the highest priority of existing forwarding policies is the maximum (10,000), the forwarding policy will fail to create because the final priority for creating the forwarding policy is the sum of 1 and 10,000, which exceeds the maximum. In this case, please specify a value or adjust the priorities of existing forwarding policies. If no forwarding policies exist, the highest priority of existing forwarding policies will be set to 1 by default. For shared load balancers, this parameter is unsupported. Minimum: 0 Maximum: 10000 |

Table 4-399 UpdateRedirectUrlConfig

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| protocol | No | String | Specifies the protocol for redirection. The value can be HTTP , HTTPS , or `\${protocol} . The default value is `\${protocol} , indicating that the protocol of the request will be used. Minimum: 1 Maximum: 36 |

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

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

Table 4-400 UpdateFixtedResponseConfig

| Parameter | Mandatory | Type | Description |
|-------------|-----------|--------|---|
| status_code | No | String | <p>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.</p> <p>Minimum: 1 Maximum: 16</p> |

| Parameter | Mandatory | Type | Description |
|--------------|-----------|--------|--|
| content_type | No | String | Specifies the format of the response body. The value can be text/plain , text/css , text/html , application/javascript , or application/json . Minimum: 1 Maximum: 64 |
| message_body | No | String | Specifies the content of the response message body. Minimum: 0 Maximum: 1024 |

Table 4-401 UpdateRedirectPoolsExtendConfig

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

Table 4-402 CreateRewriteUrlConfig

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

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| path | No | String | Specifies the path that requests are redirected to. The default value is \${path} , indicating that the path of the request will be used. The value can contain only letters, digits, and special characters <code>_~!;@^-%#&\$.+?=: \/()</code> and must start with a slash (/). <i>\$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk () in the request URL. If the number of regular expression match groups is less than the specified number, \${path} is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, \$abc#123, and the matching result is #123. If the dollar sign (\$) is followed by a special character, for example, \$#, the matching result is #.</i> |
| query | No | String | Specifies the query string set in the URL for redirection. The default value is \${query} , indicating that the query string of the request will be used. The value is case-sensitive and can contain only letters, digits, and special characters <code>!\$&'() +,-./:;=?@^_`</code> . <i>\$1, \$2, \$3, and all the way to \$9 match the wildcard asterisk () in the request URL. If the number of regular expression match groups is less than the specified number, \${path} is empty. If the dollar sign (\$) is followed by a letter, the matching result is empty until the next special character appears, for example, \$abc#123, and the matching result is #123. If the dollar sign (\$) is followed by a special character, for example, \$#, the matching result is #.</i> |

Table 4-403 CreateRuleOption

| Parameter | Mandatory | Type | Description |
|----------------|-----------|---------|---|
| admin_state_up | No | Boolean | Specifies the administrative status of the forwarding rule. The default value is true . This parameter is unsupported. Please do not use it. |
| compare_type | Yes | String | Specifies how requests are matched with the forwarding rule. Values: <ul style="list-style-type: none">• EQUAL_TO: exact match.• REGEX: regular expression match• STARTS_WITH: prefix match Note: <ul style="list-style-type: none">• If type is set to HOST_NAME, the value can only be EQUAL_TO, and asterisks (*) can be used as wildcard characters.• If type is set to PATH, the value can be REGEX, STARTS_WITH, or EQUAL_TO.• If type is set to METHOD or SOURCE_IP, the value can only be EQUAL_TO.• If type is set to HEADER or QUERY_STRING, the value can only be EQUAL_TO, asterisks (*) and question marks (?) can be used as wildcard characters. |

| Parameter | Mandatory | Type | Description |
|------------|-----------|--------|--|
| key | No | String | <p>Specifies the key of match content. For example, if the request header is used for forwarding, key is the request header.</p> <p>This parameter is unsupported. Please do not use it.</p> <p>Minimum: 0 Maximum: 255</p> |
| value | Yes | String | <p>Specifies the value of the match content. For example, if a domain name is used for matching, value is the domain name.</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, the value can contain letters, digits, hyphens (-), periods (.), and asterisks (*) <i>and must start with a letter or digit. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name.</i> If type is set to PATH and compare_type to STARTS_WITH or EQUAL_TO, the value can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+?,=!: /() [] {}</code> If type is set to METHOD, SOURCE_IP, HEADER, or QUERY_STRING, this parameter will not take effect, and conditions will be used to specify the key and value. <p>Minimum: 1 Maximum: 128</p> |
| project_id | No | String | <p>Specifies the project ID.</p> <p>Minimum: 32 Maximum: 32</p> |

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

Table 4-404 CreateRuleCondition

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

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| value | Yes | String | <p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (), <i>and must start with a letter, digit, or asterisk (^)</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~!;@^-%#&\$.*+? ,=!: /() [] {}</code> If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. If type is set to QUERY_STRING, key indicates the name of the |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|------|---|
| | | | <p>query parameter, and value indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({}), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character.</p> <ul style="list-style-type: none"> • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value indicates the source IP address of the request. The value is an IPv4 or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.] <p>All values of the condition list in a forwarding rule must be unique.</p> <p>Minimum: 1 Maximum: 128</p> |

Response Parameters

Status code: 200

Table 4-405 Response body parameters

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

Table 4-406 L7Policy

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

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

| Parameter | Type | Description |
|-----------|---------|---|
| priority | Integer | <p>Specifies the forwarding policy priority. A smaller value indicates a higher priority. The value must be unique for each forwarding policy of the same listener.</p> <p>This parameter is available only for dedicated load balancers and will take effect when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <ul style="list-style-type: none">• If action is set to REDIRECT_TO_LISTENER, the value can only be 0, indicating that REDIRECT_TO_LISTENER has the highest priority.• If enhance_l7policy_enable is set to false, forwarding policies are automatically prioritized based on the original sorting logic. Forwarding policy priorities are independent of each other regardless of domain names. If forwarding policies use the same domain name, their priorities follow the order of exact match (EQUAL_TO), prefix match (STARTS_WITH), and regular expression match (REGEX). If prefix match is used for matching, the longer the path, the higher the priority. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default.• If enhance_l7policy_enable is set to true and this parameter is not passed, the priority will set to a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. There will be two cases:<ol style="list-style-type: none">a) If the highest priority of existing forwarding policies is the maximum (10,000), the forwarding policy will fail to create because the final priority for creating the forwarding policy is the sum of 1 and 10,000, which exceeds the maximum. In this case, please specify a value or adjust the priorities of existing forwarding policies.b) If no forwarding policies exist, the highest priority of existing forwarding policies will be set to 1 by default. |

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

| Parameter | Type | Description |
|------------------------------|--|---|
| redirect_url_config | RedirectUrlConfig object | <p>Specifies the URL to which requests are forwarded.</p> <p>For dedicated load balancers, this parameter will take effect only when advanced forwarding is enabled (enhance_l7policy_enable is set to true). If it is passed when enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to REDIRECT_TO_URL. It cannot be specified if the value of action is not REDIRECT_TO_URL.</p> <p>Format: <i>protocol://host:port/path?query</i></p> <p>At least one of the four parameters (protocol, host, port, and path) must be passed, or their values cannot be set to \${xxx} at the same time. (\${xxx} indicates that the value in the request will be inherited. For example, \${host} indicates the host in the URL to be redirected.) 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. For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.</p> |
| redirect_pools_extend_config | RedirectPoolsExtendConfig object | <p>Specifies the backend server group that the requests are forwarded to. This parameter is valid only when action is set to REDIRECT_TO_POOL.</p> |
| fixed_response_config | FixedResponseConfig object | <p>Specifies the configuration of the page that will be returned. This parameter will take effect when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <p>This parameter is mandatory when action is set to FIXED_RESPONSE. It cannot be specified if the value of action is not FIXED_RESPONSE.</p> <p>For shared load balancers, this parameter is unsupported. If it is passed, an error will be returned.</p> |

| Parameter | Type | Description |
|------------|--------|---|
| 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. |

Table 4-407 RuleRef

| Parameter | Type | Description |
|-----------|--------|-----------------------------------|
| id | String | Specifies the forwarding rule ID. |

Table 4-408 RedirectUrlConfig

| Parameter | Type | Description |
|-----------|--------|---|
| protocol | String | Specifies the protocol for redirection. The value can be HTTP , HTTPS , or \${protocol} . The default value is \${protocol} , indicating that the protocol of the request will be used. Minimum: 1 Maximum: 36 |
| host | String | Specifies the host name that requests are redirected to. The value can contain only letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. The default value is \${host} , indicating that the host of the request will be used. Default: \${host} Minimum: 1 Maximum: 128 |

| Parameter | Type | Description |
|-------------|--------|--|
| port | String | Specifies the port that requests are redirected to. The default value is \${port} , indicating that the port of the request will be used. Default: \${port} Minimum: 1 Maximum: 16 |
| path | String | Specifies the path that requests are redirected to. The default value is \${path} , indicating that the path of the request will be used. The value can contain only letters, digits, and special characters <code>_-'@^-%#&\$.*+?,=!: /()[]{} </code> and must start with a slash (<code>/</code>). Default: \${path} Minimum: 1 Maximum: 128 |
| query | String | Specifies the query string set in the URL for redirection. The default value is \${query} , indicating that the query string of the request will be used. 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 . The value is case-sensitive and can contain only letters, digits, and special characters <code>!\$&'()*+,-./:;=?@^_`</code> Default: \${query} Minimum: 0 Maximum: 128 |
| status_code | String | Specifies the status code returned after the requests are redirected. The value can be 301, 302, 303, 307, or 308 . Minimum: 1 Maximum: 16 |

Table 4-409 RedirectPoolsExtendConfig

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

Table 4-410 RewriteUrlConfig

| Parameter | Type | Description |
|-----------|--------|---|
| host | String | url host |
| path | String | Specifies the URL path. |
| query | String | Specifies the URL query character string. |

Table 4-411 FixedResponseConfig

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

Example Requests

Modifying a forwarding policy

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



```
{
  "l7policy": {
    "name": "My policy.",
    "description": "Update policy.",
    "redirect_listener_id": "48a97732-449e-4aab-b561-828d29e45050"
  }
}
```

Example Responses

Status code: 200

Successful request.

```
{
  "request_id": "e5c07525-1470-47b6-9b0c-567527a036aa",
  "l7policy": {
    "redirect_pool_id": "768e9e8c-e7cb-4fef-b24b-af9399dbb240",
    "description": "",
    "admin_state_up": true,
    "rules": [ {
      "id": "c5c2d625-676b-431e-a4c7-c59cc2664881"
    } ],
    "project_id": "7a9941d34fc1497d8d0797429ecfd354",
    "listener_id": "cdb03a19-16b7-4e6b-bfec-047aeec74f56",
    "redirect_url": null,
    "redirect_url_config": null,
    "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 4-412 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 4-413 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 Updating Forwarding Policy Priorities

Function

This API is used to batch update 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 4-414 Path Parameters

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

Request Parameters

Table 4-415 Request header parameters

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

Table 4-416 Request body parameters

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

Table 4-417 BatchUpdatePriorityRequestBody

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| id | Yes | String | Specifies the ID of the forwarding policy. Minimum: 1 Maximum: 36 |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|---------|--|
| priority | Yes | Integer | <p>Specifies the forwarding policy priority. A smaller value indicates a higher priority. The value must be unique for each forwarding policy of the same listener.</p> <p>This parameter is available only for dedicated load balancers and will take effect when enhance_l7policy_enable is set to true. If this parameter is passed and enhance_l7policy_enable is set to false, an error will be returned.</p> <ul style="list-style-type: none"> • If action is set to REDIRECT_TO_LISTENER, the value can only be 0, indicating that REDIRECT_TO_LISTENER has the highest priority. • If enhance_l7policy_enable is set to false, forwarding policies are automatically prioritized based on the original sorting logic. Forwarding policy priorities are independent of each other regardless of domain names. If forwarding policies use the same domain name, their priorities follow the order of exact match (EQUAL_TO), prefix match (STARTS_WITH), and regular expression match (REGEX). If prefix match is used for matching, the longer the path, the higher the priority. If a forwarding policy contains only a domain name without a path specified, the path is /, and prefix match is used by default. |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|------|--|
| | | | <ul style="list-style-type: none"> If enhance_l7policy_enable is set to true and this parameter is not passed, the priority will set to a sum of 1 and the highest priority of existing forwarding policy in the same listener by default. There will be two cases: <ol style="list-style-type: none"> If the highest priority of existing forwarding policies is the maximum (10,000), the forwarding policy will fail to create because the final priority for creating the forwarding policy is the sum of 1 and 10,000, which exceeds the maximum. In this case, please specify a value or adjust the priorities of existing forwarding policies. If no forwarding policies exist, the highest priority of existing forwarding policies will be set to 1 by default. For shared load balancers, this parameter is unsupported. Minimum: 1 Maximum: 10000 |

Response Parameters

Status code: 202

Table 4-418 Response body parameters

| Parameter | Type | Description |
|------------|--------|-------------------------------|
| request_id | String | Specifies the backend server. |

Example Requests

Batch updating 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 4-419 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 4-420 Request header parameters

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

Table 4-421 Request body parameters

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

Table 4-422 CreateRuleOption

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

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

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

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

Table 4-423 CreateRuleCondition

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

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| value | Yes | String | <p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (), <i>and must start with a letter, digit, or asterisk (^)</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~!;@^-%#&\$.*+? ,=!: /() [] {}</code> If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. If type is set to QUERY_STRING, key indicates the name of the |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|------|---|
| | | | <p>query parameter, and value indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({}), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character.</p> <ul style="list-style-type: none"> • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value indicates the source IP address of the request. The value is an IPv4 or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.] <p>All values of the condition list in a forwarding rule must be unique.</p> <p>Minimum: 1 Maximum: 128</p> |

Response Parameters

Status code: 201

Table 4-424 Response body parameters

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

Table 4-425 L7Rule

| Parameter | Type | Description |
|----------------|---------|--|
| admin_state_up | Boolean | Specifies the administrative status of the forwarding rule. The default value is true . This parameter is unsupported. Please do not use it. |
| compare_type | String | Specifies how requests are matched with the domain name or URL. <ul style="list-style-type: none">• If type is set to HOST_NAME, this parameter can only be set to EQUAL_TO.• If type is set to PATH, the value can be REGEX, STARTS_WITH, or EQUAL_TO. |
| key | String | Specifies the key of the match content. This parameter will not take effect if type is set to HOST_NAME or PATH . Minimum: 1 Maximum: 255 |
| project_id | String | Specifies the project ID. |

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

| Parameter | Type | Description |
|---------------------|---------------------------------------|---|
| provisioning_status | String | Specifies the provisioning status of the forwarding rule. The value can only be ACTIVE (default), PENDING_CREATE , or ERROR . This parameter is unsupported. Please do not use it. |
| invert | Boolean | Specifies whether reverse matching is supported. The value is fixed at false . This parameter can be updated but will not take effect. |
| id | String | Specifies the forwarding policy ID. |
| conditions | Array of RuleCondition objects | Specifies the matching conditions of the forwarding rule. This parameter is available only when enhance_l7policy_enable is set to true . If conditions is specified, parameters key and value will not take effect, and the conditions value will contain all conditions configured for the forwarding rule. The keys in the list must be the same, whereas each value must be unique. |
| 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 4-426 RuleCondition

| Parameter | Type | Description |
|-----------|--------|--|
| key | String | <p>Specifies the key of match item.</p> <ul style="list-style-type: none">• If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is left blank.• If type is set to HEADER, key indicates the name of the HTTP header parameter. The value can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_).• If type is set to QUERY_STRING, key indicates the name of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({ }), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. <p>All keys in the conditions list in the same rule must be the same.</p> <p>Minimum: 1</p> <p>Maximum: 128</p> |

| Parameter | Type | Description |
|-----------|--------|--|
| value | String | <p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), <i>and must start with a letter, digit, or asterisk ()</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. • If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+?,=!: /() []{}</code> • If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. • If type is set to QUERY_STRING, key indicates the name of the query parameter, and value indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({}), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value indicates the source IP address of the request. The value is an IPv4 |

| Parameter | Type | Description |
|-----------|------|---|
| | | or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.] All values of the condition list in a forwarding rule must be unique. Minimum: 1 Maximum: 128 |

Example Requests

Creating a forwarding rule and setting **type** to *PATH**

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

```
{
  "rule" : {
    "compare_type" : "EQUAL_TO",
    "type" : "PATH",
    "value" : "/bbb.html"
  }
}
```

Example Responses

Status code: 201

Normal response to POST requests.

```
{
  "rule" : {
    "compare_type" : "EQUAL_TO",
    "provisioning_status" : "ACTIVE",
    "project_id" : "99a3fff0d03c428eac3678da6a7d0f24",
    "invert" : false,
    "admin_state_up" : true,
    "value" : "/bbb.html",
    "key" : null,
    "type" : "PATH",
    "id" : "84f4fcae-9c15-4e19-a99f-72c0b08fd3d7"
  },
  "request_id" : "3639f1b7-f04b-496e-9218-ec5a9e493f69"
}
```

Status Codes

| Status Code | Description |
|-------------|-----------------------------------|
| 201 | Normal response to POST requests. |

Error Codes

See [Error Codes](#).

4.13.2 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 4-427 Path Parameters

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

Table 4-428 Query Parameters

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

| Parameter | Mandatory | Type | Description |
|--------------|-----------|---------|---|
| marker | No | String | <p>Specifies the ID of the last record on the previous page.</p> <p>Note:</p> <ul style="list-style-type: none"> • This parameter must be used together with limit. • If this parameter is not specified, the first page will be queried. • This parameter cannot be left blank or set to an invalid ID. |
| page_reverse | No | Boolean | <p>Specifies whether to use reverse query. Values:</p> <ul style="list-style-type: none"> • true: Query the previous page. • false (default): Query the next page. <p>Note:</p> <ul style="list-style-type: none"> • This parameter must be used together with limit. • If page_reverse is set to true and you want to query the previous page, set the value of marker to the value of previous_marker. |
| id | No | Array | <p>Specifies the forwarding rule ID.</p> <p>Multiple IDs can be queried in the format of <i>id=xxx&id=xxx</i>.</p> |
| compare_type | No | Array | <p>Specifies how requests are matched with the domain names or URL. Values:</p> <ul style="list-style-type: none"> • EQUAL_TO: exact match. • REGEX: regular expression match • STARTS_WITH: prefix match <p>Multiple values can be queried in the format of <i>compare_type=xxx&compare_type=xxx</i>.</p> |

| Parameter | Mandatory | Type | Description |
|---------------------|-----------|---------|--|
| provisioning_status | No | Array | Specifies the provisioning status of the forwarding rule. The value can only be ACTIVE , indicating that the forwarding rule is provisioned successfully. Multiple provisioning statuses can be queried in the format of <i>provisioning_status=xxx&provisioning_status=xxx</i> . |
| invert | No | Boolean | Specifies whether reverse matching is supported. The value is fixed at false . This parameter can be updated but remains invalid. |
| admin_state_up | No | Boolean | Specifies the administrative status of the forwarding rule. The default value is true . This parameter is unsupported. Please do not use it. |
| value | No | Array | Specifies the value of the match content. Multiple values can be queried in the format of <i>value=xxx&value=xxx</i> . |
| key | No | Array | Specifies the key of the match content that is used to identify the forwarding rule. Multiple keys can be queried in the format of <i>key=xxx&key=xxx</i> . This parameter is unsupported. Please do not use it. |
| type | No | Array | Specifies the match type. The value can be HOST_NAME or PATH . The type of forwarding rules for the same forwarding policy cannot be the same. Multiple types can be queried in the format of <i>type=xxx&type=xxx</i> . |

| Parameter | Mandatory | Type | Description |
|-----------------------|-----------|-------|---|
| enterprise_project_id | No | Array | <p>Specifies the enterprise project ID.</p> <ul style="list-style-type: none">• If this parameter is not passed, resources in the default enterprise project are queried, and authentication is performed based on the default enterprise project.• If this parameter is passed, its value can be the ID of an existing enterprise project (resources in the specific enterprise project are required) or all_granted_eps (resources in all enterprise projects are queried). <p>Multiple IDs can be queried in the format of <i>enterprise_project_id=xxx&enterprise_project_id=xxx</i>.</p> |

Request Parameters

Table 4-429 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 4-430 Response body parameters

| Parameter | Type | Description |
|------------|------------------------|---|
| request_id | String | Specifies the request ID. The value is automatically generated. |
| page_info | PageInfo object | Shows pagination information. |

| Parameter | Type | Description |
|-----------|---|-----------------------------|
| rules | Array of L7Rule objects | Lists the forwarding rules. |

Table 4-431 PageInfo

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

Table 4-432 L7Rule

| Parameter | Type | Description |
|----------------|---------|---|
| admin_state_up | Boolean | Specifies the administrative status of the forwarding rule. The default value is true . This parameter is unsupported. Please do not use it. |
| compare_type | String | Specifies how requests are matched with the domain name or URL. <ul style="list-style-type: none"> If type is set to HOST_NAME, this parameter can only be set to EQUAL_TO. If type is set to PATH, the value can be REGEX, STARTS_WITH, or EQUAL_TO. |
| key | String | Specifies the key of the match content. This parameter will not take effect if type is set to HOST_NAME or PATH . Minimum: 1 Maximum: 255 |
| project_id | String | Specifies the project ID. |

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

| Parameter | Type | Description |
|---------------------|---------------------------------------|---|
| provisioning_status | String | <p>Specifies the provisioning status of the forwarding rule.</p> <p>The value can only be ACTIVE (default), PENDING_CREATE, or ERROR.</p> <p>This parameter is unsupported. Please do not use it.</p> |
| invert | Boolean | <p>Specifies whether reverse matching is supported. The value is fixed at false. This parameter can be updated but will not take effect.</p> |
| id | String | <p>Specifies the forwarding policy ID.</p> |
| conditions | Array of RuleCondition objects | <p>Specifies the matching conditions of the forwarding rule. This parameter is available only when enhance_l7policy_enable is set to true.</p> <p>If conditions is specified, parameters key and value will not take effect, and the conditions value will contain all conditions configured for the forwarding rule. The keys in the list must be the same, whereas each value must be unique.</p> |
| 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 4-433 RuleCondition

| Parameter | Type | Description |
|-----------|--------|--|
| key | String | <p>Specifies the key of match item.</p> <ul style="list-style-type: none">• If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is left blank.• If type is set to HEADER, key indicates the name of the HTTP header parameter. The value can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_).• If type is set to QUERY_STRING, key indicates the name of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({ }), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. <p>All keys in the conditions list in the same rule must be the same.</p> <p>Minimum: 1</p> <p>Maximum: 128</p> |

| Parameter | Type | Description |
|-----------|--------|--|
| value | String | <p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), <i>and must start with a letter, digit, or asterisk ()</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. • If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+?,=!: /() []{}</code> • If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. • If type is set to QUERY_STRING, key indicates the name of the query parameter, and value indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({}), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value indicates the source IP address of the request. The value is an IPv4 |

| Parameter | Type | Description |
|-----------|------|---|
| | | or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.] All values of the condition list in a forwarding rule must be unique. Minimum: 1 Maximum: 128 |

Example Requests

Querying forwarding rules

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

Example Responses

Status code: 200

Successful request.

```
{
  "rules": [ {
    "compare_type": "STARTS_WITH",
    "provisioning_status": "ACTIVE",
    "project_id": "99a3fff0d03c428eac3678da6a7d0f24",
    "invert": false,
    "admin_state_up": true,
    "value": "/ccc.html",
    "key": null,
    "type": "PATH",
    "id": "84f4fcae-9c15-4e19-a99f-72c0b08fd3d7"
  } ],
  "page_info": {
    "previous_marker": "84f4fcae-9c15-4e19-a99f-72c0b08fd3d7",
    "current_count": 1
  },
  "request_id": "ae4dbd7d-9271-4040-98b6-3bfe45bb15ee"
}
```

Status Codes

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

Error Codes

See [Error Codes](#).

4.13.3 Viewing Details of a Forwarding Rule

Function

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

Calling Method

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

URI

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

Table 4-434 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 4-435 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 4-436 Response body parameters

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

Table 4-437 L7Rule

| Parameter | Type | Description |
|----------------|---------|--|
| admin_state_up | Boolean | Specifies the administrative status of the forwarding rule. The default value is true . This parameter is unsupported. Please do not use it. |
| compare_type | String | Specifies how requests are matched with the domain name or URL. <ul style="list-style-type: none">• If type is set to HOST_NAME, this parameter can only be set to EQUAL_TO.• If type is set to PATH, the value can be REGEX, STARTS_WITH, or EQUAL_TO. |
| key | String | Specifies the key of the match content. This parameter will not take effect if type is set to HOST_NAME or PATH . Minimum: 1 Maximum: 255 |
| project_id | String | Specifies the project ID. |
| type | String | Specifies the type of the forwarding rule. The value can be one of the following: <ul style="list-style-type: none">• HOST_NAME: A domain name will be used for matching.• PATH: A URL will be used for matching.• METHOD: An HTTP request method will be used for matching.• HEADER: The request header will be used for matching.• QUERY_STRING: A query string will be used for matching.• SOURCE_IP: The source IP address will be used for matching. Note: If type is set to HOST_NAME , PATH , METHOD , and SOURCE_IP , only one forwarding rule can be created for each type. If type is set to HEADER and QUERY_STRING , multiple forwarding rules can be created for each type. |

| Parameter | Type | Description |
|---------------------|---------------------------------------|--|
| value | String | <p>Specifies the value of the match item. For example, if a domain name is used for matching, value is the domain name. This parameter will take effect only when conditions is left blank.</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, the value can contain letters, digits, hyphens (-), and periods (.) and must start with a letter or digit. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. If type is set to PATH and compare_type to STARTS_WITH or EQUAL_TO, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+?=:! \/()[]{}</code> If type is set to METHOD, SOURCE_IP, HEADER, or QUERY_STRING, this parameter will not take effect, and conditions will be used to specify the key and value. <p>Minimum: 1 Maximum: 128</p> |
| provisioning_status | String | <p>Specifies the provisioning status of the forwarding rule.</p> <p>The value can only be ACTIVE (default), PENDING_CREATE, or ERROR.</p> <p>This parameter is unsupported. Please do not use it.</p> |
| invert | Boolean | <p>Specifies whether reverse matching is supported. The value is fixed at false. This parameter can be updated but will not take effect.</p> |
| id | String | <p>Specifies the forwarding policy ID.</p> |
| conditions | Array of RuleCondition objects | <p>Specifies the matching conditions of the forwarding rule. This parameter is available only when enhance_l7policy_enable is set to true.</p> <p>If conditions is specified, parameters key and value will not take effect, and the conditions value will contain all conditions configured for the forwarding rule. The keys in the list must be the same, whereas each value must be unique.</p> |

| Parameter | Type | Description |
|------------|--------|---|
| created_at | String | Specifies the time when the forwarding rule was added. The format is yyyy-MM-dd'T'HH:mm:ss'Z' (UTC time). 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 4-438 RuleCondition

| Parameter | Type | Description |
|-----------|--------|---|
| key | String | Specifies the key of match item. <ul style="list-style-type: none"> If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is left blank. If type is set to HEADER, key indicates the name of the HTTP header parameter. The value can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_). If type is set to QUERY_STRING, key indicates the name of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({}), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. <p>All keys in the conditions list in the same rule must be the same.</p> <p>Minimum: 1 Maximum: 128</p> |

| Parameter | Type | Description |
|-----------|--------|--|
| value | String | <p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), <i>and must start with a letter, digit, or asterisk ()</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. • If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+?,=!: /() []{}</code> • If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. • If type is set to QUERY_STRING, key indicates the name of the query parameter, and value indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({}), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value indicates the source IP address of the request. The value is an IPv4 |

| Parameter | Type | Description |
|-----------|------|---|
| | | or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.] All values of the condition list in a forwarding rule must be unique. Minimum: 1 Maximum: 128 |

Example Requests

Querying details of a given forwarding rule

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

Example Responses

Status code: 200

OK

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

Status Codes

| Status Code | Description |
|-------------|-------------|
| 200 | OK |

Error Codes

See [Error Codes](#).

4.13.4 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 4-439 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 4-440 Request header parameters

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

Table 4-441 Request body parameters

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

Table 4-442 UpdateL7RuleOption

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

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

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

| Parameter | Mandatory | Type | Description |
|------------|-----------|---|---|
| conditions | No | Array of UpdateRuleCondition objects | <p>Specifies the matching conditions of the forwarding rule. This parameter is available only when enhance_l7policy_enable is set to true.</p> <p>If conditions is specified, parameters key and value will not take effect, and the conditions value will contain all conditions configured for the forwarding rule. The keys in the list must be the same, whereas each value must be unique.</p> |

Table 4-443 UpdateRuleCondition

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

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| value | No | String | <p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (), <i>and must start with a letter, digit, or asterisk (^)</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~!;@^-%#&\$.*+? ,=!: /() [] {}</code> If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. If type is set to QUERY_STRING, key indicates the name of the |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|------|---|
| | | | <p>query parameter, and value indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({}), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character.</p> <ul style="list-style-type: none"> • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value indicates the source IP address of the request. The value is an IPv4 or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.] <p>All values of the condition list in a forwarding rule must be unique.</p> <p>Minimum: 1 Maximum: 128</p> |

Response Parameters

Status code: 200

Table 4-444 Response body parameters

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

Table 4-445 L7Rule

| Parameter | Type | Description |
|----------------|---------|--|
| admin_state_up | Boolean | Specifies the administrative status of the forwarding rule. The default value is true . This parameter is unsupported. Please do not use it. |
| compare_type | String | Specifies how requests are matched with the domain name or URL. <ul style="list-style-type: none">• If type is set to HOST_NAME, this parameter can only be set to EQUAL_TO.• If type is set to PATH, the value can be REGEX, STARTS_WITH, or EQUAL_TO. |
| key | String | Specifies the key of the match content. This parameter will not take effect if type is set to HOST_NAME or PATH . Minimum: 1 Maximum: 255 |
| project_id | String | Specifies the project ID. |

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

| Parameter | Type | Description |
|---------------------|---------------------------------------|---|
| provisioning_status | String | Specifies the provisioning status of the forwarding rule. The value can only be ACTIVE (default), PENDING_CREATE , or ERROR . This parameter is unsupported. Please do not use it. |
| invert | Boolean | Specifies whether reverse matching is supported. The value is fixed at false . This parameter can be updated but will not take effect. |
| id | String | Specifies the forwarding policy ID. |
| conditions | Array of RuleCondition objects | Specifies the matching conditions of the forwarding rule. This parameter is available only when enhance_l7policy_enable is set to true . If conditions is specified, parameters key and value will not take effect, and the conditions value will contain all conditions configured for the forwarding rule. The keys in the list must be the same, whereas each value must be unique. |
| 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 4-446 RuleCondition

| Parameter | Type | Description |
|-----------|--------|--|
| key | String | <p>Specifies the key of match item.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, PATH, METHOD, or SOURCE_IP, this parameter is left blank. • If type is set to HEADER, key indicates the name of the HTTP header parameter. The value can contain 1 to 40 characters, including letters, digits, hyphens (-), and underscores (_). • If type is set to QUERY_STRING, key indicates the name of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({ }), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. <p>All keys in the conditions list in the same rule must be the same.</p> <p>Minimum: 1</p> <p>Maximum: 128</p> |

| Parameter | Type | Description |
|-----------|--------|--|
| value | String | <p>Specifies the value of the match item.</p> <ul style="list-style-type: none"> • If type is set to HOST_NAME, key is left blank, and value indicates the domain name, which can contain 1 to 128 characters, including letters, digits, hyphens (-), periods (.), and asterisks (*), <i>and must start with a letter, digit, or asterisk ()</i>. If you want to use a wildcard domain name, enter an asterisk (*) as the leftmost label of the domain name. • If type is set to PATH, key is left blank, and value indicates the request path, which can contain 1 to 128 characters. If compare_type is set to STARTS_WITH or EQUAL_TO for the forwarding rule, the value must start with a slash (/) and can contain only letters, digits, and special characters <code>_~';@^-%#&\$.*+?,=!: /() []{}</code> • If type is set to HEADER, key indicates the name of the HTTP header parameter, and value indicates the value of the HTTP header parameter. The value can contain 1 to 128 characters. Asterisks (*) and question marks (?) are allowed, but spaces and double quotation marks are not allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. • If type is set to QUERY_STRING, key indicates the name of the query parameter, and value indicates the value of the query parameter. The value is case sensitive and can contain 1 to 128 characters. Spaces, square brackets ([]), curly brackets ({}), angle brackets (< >), backslashes (\), double quotation marks (" "), pound signs (#), ampersands (&), vertical bars (), percent signs (%), and tildes (~) are not supported. Asterisks (*) and question marks (?) are allowed. An asterisk can match zero or more characters, and a question mark can match 1 character. • If type is set to METHOD, key is left blank, and value indicates the HTTP method. The value can be GET, PUT, POST, DELETE, PATCH, HEAD, or OPTIONS. • If type is set to SOURCE_IP, key is left blank, and value indicates the source IP address of the request. The value is an IPv4 |

| Parameter | Type | Description |
|-----------|------|---|
| | | or IPv6 CIDR block, for example, 192.168.0.2/32 or 2049::49/64.] All values of the condition list in a forwarding rule must be unique. Minimum: 1 Maximum: 128 |

Example Requests

Modifying a forwarding rule

PUT https://ELB_Endpoint/v3/{99a3fff0d03c428eac3678da6a7d0f24}/elb/l7policies/cf4360fd-8631-41ffa6f5-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 4-447 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 4-448 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 API (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.</p> <p>This parameter is reserved, and the default value is 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. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">• true: Enabled• false: Disabled |
| 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 for resources 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 listener from which pagination query starts, that is, the ID of the last listener on the previous page. This parameter must be used together with limit . |
| limit | No | Integer | Specifies the number of listeners on each page. If this parameter is not set, all load balancers 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 . |

| Parameter | Mandatory | Type | Description |
|---------------------|-----------|---------|---|
| 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. This parameter is reserved, and the default value is true . |
| 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. |
| 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. |

| Parameter | Mandatory | Type | Description |
|-----------------------|-----------|--------|---|
| enterprise_project_id | No | String | <p>Specifies the enterprise project ID.</p> <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:loadbalancers: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:loadbalancers: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. |
| 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. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">● true: Enabled● false: Disabled |
| 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 for resources 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. |
| 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. |

| Parameter | Type | Description |
|---------------------|--|---|
| 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. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">• true: Enabled• false: Disabled |
| 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. |

| Parameter | Type | Description |
|-----------------------|--------|---|
| 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. |
| protection_status | String | Specifies whether modification protection for resources 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 . |

| Parameter | Type | Description |
|-----------|---|---|
| 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 . |
| operating_status | String | This field is reserved. It specifies the operating status of the load balancer. The value can be one of the following: <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 | This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the load balancer. |

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 | This parameter is reserved, and its value can only be ONLINE . It specifies the operating status of the listener. |
| 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. |

| Parameter | Type | Description |
|---------------------|--------|--|
| 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. |
| 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. This parameter is reserved, and the default value is true . |

| 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. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">● true: Enabled● false: Disabled |
| 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 for resources 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 | Mandatory | Type | Description |
|------------|-----------|--------|---------------------------|
| project_id | Yes | String | 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 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. <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 | SessionPersistence 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 range varies depending on the protocol of the backend server group:</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 range varies depending on the protocol of the backend server group:</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 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. <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 range varies depending on the protocol of the backend server group:</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 | Mandator y | Type | Description |
|------------|---------------|------------|---------------------------|
| project_id | Yes | Strin g | Specifies the project ID. |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|---|
| pool_id | Yes | String | Specifies the ID of the backend server group. |

Request

None

Response

Table 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 range varies depending on the protocol of the backend server group:</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 range varies depending on the protocol of the backend server group: <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 range varies depending on the protocol of the backend server group:</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. The value range varies depending on the protocol of the backend server group:</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 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. |

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. |
| 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 . |

| Parameter | Type | Description |
|------------------|--------|--|
| 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. |
| 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 . |

| Parameter | Type | Description |
|------------------|--------|--|
| 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 . |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|---------|--|
| 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. |
| 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. |

| Parameter | Type | Description |
|------------------|---------|--|
| 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. |
| 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: 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](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 | Mandator y | Type | Description |
|------------|---------------|------------|---|
| project_id | Yes | Strin g | Specifies the project ID. |
| pool_id | Yes | Strin g | Specifies the ID of the backend server group. |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|--------|--|
| 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 | Healthmonitor 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 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 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 . |
| 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 . |

| Parameter | Mandatory | Type | Description |
|----------------|-----------|---------|--|
| admin_state_up | No | Boolean | <p>Specifies the administrative status of the health check.</p> <p>The value can be true or false. The default value is true.</p> <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 | <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 | No | String | <p>Specifies the health check protocol.</p> <p>The value can be TCP, UDP_CONNECT, or HTTP.</p> |
| monitor_port | No | Integer | <p>Specifies the port used for the health check.</p> <p>The value is left blank by default, indicating that the port of the backend server is used as the health check port.</p> |
| expected_codes | No | String | <p>Specifies the expected HTTP status code. The following options are available:</p> <ul style="list-style-type: none">A single value, such as 200A list of values, such as 200,202A value range, such as 200-204 <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> |

| 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> |
| 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 | 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. |
| 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. |

| 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. This parameter is reserved, and the default value is 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 range varies depending on the protocol of the backend server group:</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. 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. 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. This parameter is reserved, and the default value is true . |
| type | String | Yes | Specifies the match type of a forwarding rule. The value range varies depending on the protocol of the backend server group: <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. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">● true: Enabled● false: Disabled |
| 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 range varies depending on the protocol of the backend server group: <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. |

| Parameter | Type | Description |
|---------------------|-------------------------------|---|
| 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 5-120 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-919feaf89d60",
    "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. |

| Parameter | Mandatory | Type | Description |
|----------------------|-----------|---------|---|
| admin_state_up | No | Boolean | Specifies the administrative status of the forwarding policy. This parameter is reserved, and the default value is true . |
| 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 range varies depending on the protocol of the backend server group: <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. |

| Parameter | Mandatory | Type | Description |
|-----------------------|-----------|--------|--|
| provisioning_status | No | String | This parameter is reserved, and its value can only be ACTIVE . It specifies the provisioning status of the forwarding policy. |
| enterprise_project_id | No | String | Specifies the enterprise project ID. Enterprise projects are used for fine-grained authentication. <ul style="list-style-type: none"> 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. |

| Parameter | Type | Description |
|----------------------|-------------------------------|---|
| 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. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">• true: Enabled• false: Disabled |
| 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 range varies depending on the protocol of the backend server group: <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. |

| 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 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 | Mandatory | Type | Description |
|-------------|-----------|--------|-------------------------------------|
| project_id | Yes | String | Specifies the project ID. |
| 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. |

| Parameter | Type | Description |
|----------------------|-------------------------------|---|
| admin_state_up | Boolean | Specifies the administrative status of the forwarding policy. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">• true: Enabled• false: Disabled |
| 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 range varies depending on the protocol of the backend server group: <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 5-129 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/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586

Example Response

- Example response 1

```
{
  "l7policy": {
    "redirect_pool_id": "431a03eb-81bb-408e-ae37-7ce19023692b",
    "redirect_listener_id": null,
    "description": "",
    "admin_state_up": true,
    "rules": [
      {
        "id": "67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3"
      },
      {
        "id": "f02b3bca-69d2-4335-a3fa-a8054e996213"
      }
    ],
    "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
    "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 | <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. |

| Parameter | Mandatory | Type | Description |
|----------------------|-----------|---------|--|
| redirect_listener_id | No | String | <p>Specifies the ID of the listener to which the traffic is redirected. The default value is 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. |
| admin_state_up | No | Boolean | <p>Specifies the administrative status of the forwarding policy.</p> <p>This parameter is reserved, and the default value is true.</p> |

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 | <p>Specifies the administrative status of the forwarding policy.</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 |
|----------------------|-------------------------------|---|
| 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 range varies depending on the protocol of the backend server group: <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 5-135 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 | Mandatory | Type | Description |
|-------------|-----------|--------|-------------------------------------|
| project_id | Yes | String | Specifies the project ID. |
| l7policy_id | Yes | String | Specifies the forwarding policy ID. |

Request

Table 5-138 Parameter description

| Parameter | Mandatory | 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. This parameter is reserved, and the default value is true . |

| Parameter | Mandatory | Type | Description |
|--------------|-----------|---------|---|
| type | Yes | String | <p>Specifies the match type of a forwarding rule.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none">● HOST_NAME: matches the domain name in the request.● PATH: matches the path in the request. <p>The match type of forwarding rules in a forwarding policy must be unique.</p> |
| compare_type | Yes | String | <p>Specifies the match mode. The options are as follows:</p> <p>When 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 | 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 | Yes | String | <p>Specifies the value of the match content. The value cannot contain spaces.</p> <p>The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"> 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. |
| 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> |

| Parameter | Type | Description |
|----------------|---------|---|
| admin_state_up | Boolean | <p>Specifies the administrative status of the forwarding rule.</p> <p>This parameter is reserved. The value can be true or false.</p> <ul style="list-style-type: none">● true: Enabled● false: Disabled |
| type | String | <p>Specifies the match type of a forwarding rule.</p> <p>The value range varies depending on the protocol of the backend server group:</p> <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 | <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 | <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 | <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 | 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 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 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. This parameter is reserved, and the default value is true . |
| type | No | String | Specifies the match type of a forwarding rule. The value range varies depending on the protocol of the backend server group: <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 | 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. |
| 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> |
| value | No | String | <p>Specifies the value of the match content.</p> <p>The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"> • 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 | Mandatory | Type | Description |
|---------------------|-----------|--------|---|
| 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. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">● true: Enabled● false: Disabled |
| type | String | Specifies the match type of a forwarding rule. The value range varies depending on the protocol of the backend server group: <ul style="list-style-type: none">● HOST_NAME: matches the domain name in the request.● PATH: matches the path in the request. |

| Parameter | Type | Description |
|---------------------|---------|--|
| compare_type | 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. |
| invert | 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 | 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> |
| value | String | <p>Specifies the value of the match content.</p> <p>The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"> • 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 | <p>This parameter is reserved, and its value can only be ACTIVE.</p> <p>It specifies the provisioning status of the forwarding rule.</p> |

Example Request

- Example request: Querying all forwarding rules of a specific forwarding policy
GET https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules

Example Response

- Example response

```
{
  "rules": [
    {
      "compare_type": "EQUAL_TO",
      "provisioning_status": "ACTIVE",
      "admin_state_up": true,
      "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",

      "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 | 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. |
| 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. This parameter is reserved. The value can be true or false . <ul style="list-style-type: none">● true: Enabled● false: Disabled |
| type | String | Specifies the match type of a forwarding rule. The value range varies depending on the protocol of the backend server group: <ul style="list-style-type: none">● HOST_NAME: matches the domain name in the request.● PATH: matches the path in the request. |

| Parameter | Type | Description |
|---------------------|---------|--|
| compare_type | 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. |
| invert | 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 | 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> |
| value | String | <p>Specifies the value of the match content.</p> <p>The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"> • 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 | <p>This parameter is reserved, and its value can only be ACTIVE.</p> <p>It specifies the provisioning status of the forwarding rule.</p> |

Example Request

- Example request: Querying details of a forwarding rule
GET https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/l7policies/5ae0e1e7-5f0f-47a1-b39f-5d4c428a1586/rules/67d8a8fa-b0dd-4bd4-a85b-671db19b2ef3

Example Response

- Example response 1

```
{
  "rule": {
    "compare_type": "EQUAL_TO",
    "provisioning_status": "ACTIVE",
    "admin_state_up": true,
    "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",

    "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 | Mandator y | 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 | 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. |
| admin_state_up | No | Boolean | Specifies the administrative status of the forwarding rule. This parameter is reserved, and the default value is true . |
| 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. |

| 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 | <p>Specifies the administrative status of the forwarding rule.</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 |
|--------------|---------|--|
| type | String | <p>Specifies the match type of a forwarding rule. The value range varies depending on the protocol of the backend server group:</p> <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 | <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 | <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 | <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> |
| value | String | <p>Specifies the value of the match content. The value contains a maximum of 128 characters.</p> <ul style="list-style-type: none"> ● 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 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 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 range varies depending on the protocol of the backend server group:</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>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none">• A common domain name contains 0 to 100 characters and consists of several labels separated by dots (.). 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 . |

Response

Table 5-175 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. |

| Parameter | Type | Description |
|-------------|--------|--|
| type | String | Specifies the certificate type. The value range varies depending on the protocol of the backend server group: <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. |

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-----
  \nMIIIEvglBADANBgkqhkiG9w0BAQEFAASCBAgEAAoIBAQQDQVAbOLe5xNf4M
  \n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KCnX1nfzTvi2ksXITQ2o9BkpStnPe
  \ntB4s32ZijRMLk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
  \nMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8Icq39buNplgDOWzEP5AzcXt
  \nCOFYn6RTH5SRug4hKNN7sT1eYMsIHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl
  \nZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwCRLU08k
  \nEo04Z9H/AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/HI
```

```
\nfvCarftGgMaYWPSNCRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFgZjv5OQB
\nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYnNBbcfgh8lSEtq8YaXngBO6vES9LMhHkNKKr
\nciu9YklnNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvTXcoU6fm7gYdHAD6jk9lc9M
\nEGpfYl6AdHlwFZcT/RNAXhP82lg2gUJSgAu66FFDjMwQXKbafkdP3zq4Up8a7Ale
\nkrguPtfV1vWklg+bUfhGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\nXUqgCZo8MKeV2jf2drLxRRwRL33SksQbzAQ/qrLdT7GP3sCGqvkvWY2FPdFyF8kx
\nGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpp7dt
\nJ7n8EzkRUNE6alMHOFeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\niWgTWHXPZxUqaYhpjXo6+IMl6DpExiDgBAkMzJGlvS7yQiYwU+wthAr9urbWYdGZ
\nlS6VjoTkF6r7VZolLXX0fbuXh6lm8K8lQRfBpjff56p9phMwaBpDNDrfpHB5utBU
\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
\nl1VQhELG9CbKsZdKM71GyElmix/T7FnSHIwlho1qVo6AQyduNWnAQD15pr8KAd
\nXGXAZZ1FQcb3KYa+2fflERmazdOTWjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
\n/735uP20KkqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxAcYocdDxtY4Vha
\nfl7FPMdvG8ioYbvlHFh+X0xs9r1S8yeWnHoXMB6eXWmYKMrAoveLa+2cFm1Agf
\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9o
\nHjHjWB7pQUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDjKxfXkcsY9IluK
\nfaoXgjkR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd
\n3fy+1rCUwzOp9LSjtYf4ege
\n-----END PRIVATE KEY-----",
  "certificate":
  "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgIcERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMmTXID
\nb21wYw51ENBMB4XDTE4MDcwMjEzMU0N1oXDTQ1MTEyNzEzMU0N1owFDESMBAG
\nA1UEAwJbG9jYWxob3N0MIIlBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
\n0FQZi3ucTX+DNud1p/b4XVM6i3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5
\nUONqPQZKURz3rQeLN9mYiUTJZPutYlFDDbB8CtIgv+eyU9yYJslWx/Bm5kWNPh9
\n7B9Yu9ppb2u6zDA99IC4ekKD93KuzlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\nlAZlsxD+QM6l7QjhWj+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/K
\nny09cxLKAfTgoZWQD2FAZJf97k1kYNwqITz3CPILZUUn7yw3nkOOtLMI28IEv0Wy
\nYd7CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21hA4Uy29t
\nnhwQKuUvJhwr/AAABMBMGGA1UdJQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBcWUA
\nA4IBAQA8lMQxaTey7EjXtRLSVIEAMftAQP6gijNQuvIBQYUDauDT4W2XUZ5wAn
\njiOyQ83va672K1G9s8n6xlH+xwwdSNnozaKzC87vwSeZKI0dl9I5198TGKl6OoDa
\nnezmcwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNjvPRLYLzp1HMnl6hkjPk4PCZ
\nnwKnhao0dlScati9Cct3UzXSNJOSLalKdHERH08lqd+1BchScxChk0xNITn1HZZGml
\nn+vbmunok3A2lucl14rnsrbcKgyGqGikySN6B2cRLBDK4Y3wChiW6NvYtVqcx5/mZ
\nniYsGDVN+9QBd0eYUHce+77s96i3l
\n-----END CERTIFICATE-----"
}
```

Example Response

- Example response

```
{
  "domain": "www.elb.com",
  "expire_time": "2045-11-17 13:25:47",
  "update_time": "2017-12-04 06:49:13",
  "create_time": "2017-12-04 06:49:13",
  "id": "3d8a7a02f87a40ed931b719edfe75451",
  "admin_state_up": true,
  "private_key": "-----BEGIN PRIVATE KEY-----
\nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KcnX1nfzTvl2ksXITQ2o9BkpStnPe
\nbT4s32ZijRmlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lq39buNplgDOWzEP5AqzXt
\nCOFYn6RTH5SRug4hKNN7sT1eYmslHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl
\nZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjwbwS/RbJh3slwCRLU08k
\nEo04Z9H/AgMBAAEcgEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\nfvCarftGgMaYWPSNCRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFgZjv5OQB
\nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYnNBbcfgh8lSEtq8YaXngBO6vES9LMhHkNKKr
\nciu9YklnNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvTXcoU6fm7gYdHAD6jk9lc9M
\nEGpfYl6AdHlwFZcT/RNAXhP82lg2gUJSgAu66FFDjMwQXKbafkdP3zq4Up8a7Ale
\nkrguPtfV1vWklg+bUfhGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\nXUqgCZo8MKeV2jf2drLxRRwRL33SksQbzAQ/qrLdT7GP3sCGqvkvWY2FPdFyF8kx
\nGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpp7dt
\nJ7n8EzkRUNE6alMHOFeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\niWgTWHXPZxUqaYhpjXo6+IMl6DpExiDgBAkMzJGlvS7yQiYwU+wthAr9urbWYdGZ
\nlS6VjoTkF6r7VZolLXX0fbuXh6lm8K8lQRfBpjff56p9phMwaBpDNDrfpHB5utBU
```

```
\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
\n1lVQhELGI9CbKsdzKM71GyElmix/T7FnJSHIwlho1qVo6AQyduNWnAQD15pr8KAd
\nXGXAZZ1FQcb3KYa+2fFlERmazdOTWjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
\n/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
\nfl7FPMdvGl8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMJrAoveLa+2cFm1Agf
\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54PwD4Ctfk9o
\njHjWB7pQUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDJkxfciXKcsYr9lluk
\nfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd
\n3fy+1rCUwzOp9LSjtYf4ege
\n-----END PRIVATE KEY-----",
  "tenant_id": "930600df07ac4f66964004041bd3deaf",
  "type": "server",
  "certificate": "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgI CERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nb21wYW55IENBMB4XDTE4MDcwMjEzU0N1oXDTQ1MTEyNzEzU0N1owFDESMBAG
\nA1UEAwJbG9jYXVob3N0MIIIBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
\n0FQGzi3ucTX+DNud1p/b4XVM6I3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5
\nU0NqPQZKUrZz3rQeLN9mYiUTJZPutYIFDDbB8CtIv+eyU9yYJslWx/Bm5kWNPh9
\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\nAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/K
\ny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPLZUUn7yw3nkOOTLMI28IEv0Wy
\nYd7CMJQkS1NPJBKNOfR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\nnhwQKuUvJhwr/AAABMBMGA1UdJQMMAoGCCsGAQUFBwMBMA0GCsGCSqGSIb3DQEBCwUA
\nA4IBAQA8IMQxaTey7EjXtRSLVIEAMftAQPG6jjNQUVIBQYUDauDT4W2XU25wAn
\nnjiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
\nnezmzCwQYtHBMVQ4c7MI8554Ft1mWSt4dMAK2rzNYjvPRLYlp1HMni6hkjPk4PCZ
\nnwKha0dlScatI9Cct3UzXSNJOSLaIKdHErH08lqd+1BchScxCfk0xNITn1HZZGml
\n+vbmunok3A2lucl14rnsrbcGyqxGikySN6B2cRLBDK4Y3wChiW6NNVYtVqcx5/mZ
\nniYsGDVN+9QBd0eYUHce+77s96i3l
\n-----END CERTIFICATE-----",
  "name": "https_certificate",
  "description": "description for certificate"
}
```

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 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 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 range varies depending on the protocol of the backend server group: <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>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none">• A common domain name contains 0 to 100 characters and consists of several labels separated by dots (.). 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. |

| Parameter | Mandatory | Type | Description |
|-------------|-----------|--------|---|
| certificate | No | 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. |
| 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. |

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. |

| Parameter | Type | Description |
|----------------|---------|--|
| 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 range varies depending on the protocol of the backend server group: <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. |
| 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. |

| Parameter | Type | Description |
|-------------|--------|---|
| update_time | String | Specifies the time when the certificate was updated. The UTC time is in <i>YYYY-MM-DD HH:MM:SS</i> format. |

Example Request

- Request example 1: Querying all certificates
GET https://{Endpoint}/v2/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-----
\nMIIC4TCCAcmgAwIBAgIcERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nb21wYW55IENBMB4XDTE4MDcwMjEzMTU0N1oXDTE4MTExNzEzMTU0N1owFDESMBAG
\nA1UEAwJbG9jYWxob3N0MIIlBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAn0FQZi3ucTX
+DNud1p/
b4XVM6i3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5\nU0NqPQZKUrZz3rQeLN9mYiUTJZPutYIFDDb
B8CtIqV+eyU9yYJslWx/
Bm5kWNPh9\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6fCHKt/W7jaS
\nlAzlsx+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/K
\ny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7yw3nkOOTLMI28IEv0WY
\nYd7CMJQkS1NPIBKNQOFR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\nhWQKuUvJhwr/AAABMBMGA1UdJQQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBCwUA
\nA4IBAQA8lMQxaTey7EjXtRLSVIEAMftAQPG6jjNQvIBQYUDauDT4W2XU25wAn
\njiOyQ83va672K1G9s8n6xlH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
\nnezmcwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRLYlp1HMnl6hkjPk4PCZ
\nnwKha0dlScat9Cct3UzXSNJOSLalKdHErH08lqd+1BchScxCfk0xNITn1HZZGml\n
+vbmunok3A2lucl14nsrcbkGYqxGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ\niYsGDVN
+9QBd0eYUHce+77s96i3l\n-----END CERTIFICATE-----",
      "create_time": "2017-02-25 09:35:27",
      "expire_time": "2045-11-17 13:25:47",
      "description": "description for certificate",
      "domain": "www.elb.com",
      "id": "23ef9aad4ecb463580476d324a6c71af",
      "admin_state_up": true,
      "tenant_id": "a31d2bdcf7604c0faaddb058e1e08819",
      "name": "https_certificate",
      "private_key": "-----BEGIN PRIVATE KEY-----
\nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBAgEAAoIBAQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KcN1nfzTvl2ksXITQ2o9BkpStnPe\ntB4s32ZiJRMlk
+61iUUMNsHwK2WBX57J3gmyVbH8GbmRY0+H3sH1i72luna7rM
\nMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8Icq39buNplgDOWzEP5AqzXt
\nCOFYn6RTH5SRug4hKNN7sT1eYMsLHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Ch\nnZAPYUBkl/
0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjwbgS/RbJh3slwCRLU08k\nEo04Z9H/
AgMBAAEAgEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/HL
\nfvfCarftGgMaYWPNSCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFGZjv5OQB
\nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKR
\nnciu9YklnNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lC9M\nEGpfY16ADHwFZCT/
RNAxhP82lg2gUJSgAu66FFdJmWQXkbafKdP3zq4Up8a7Ale\nnkrguPtFv1vWklg
```

```
+bUFhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\nXUqgCZo8MKeV2jf2drLxRRwRL33SksQbzAQ/qrLdT7GP3sCGqvkxWY2FPdFYf8kx
\nGcCeZPcleZYQCAM41pjtsaM8tVbLWVVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpp7dt
\n7n8EzkRUNE6aIMHOFEeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9vT7mTgKYK4aLr
\niWgTWHXPZxUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
\nLS6VjoTkF6r7VZoLXX0fbuXh6lm8K8lQRfBpjff56p9pMwaBpDNDrfpHB5utBU
\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
\n1lVQhELG9CbKsdzKM71GyElmix/T7FnJSHIwlho1qVo6AQyduNWnAQD15pr8KAd
\nXGXAZZ1FQcb3KYa+2fflERmazedOTwYjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak\n/
735uP20KKqhNehZpC2dJei7OilgRhCs/dKASUXHSW4fptBnUxACYocdDxtY4Vha\nnfl7FPMdvGl8ioYbvlHFh
+X0Xs9r1S8yeWnHoXMB6eXWmYKMJrAoveLa+2cFm1Agf
\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54Pwd4Ctfk9o
\nHjWB7pQLUYpTZO9dm+4fpcMn9Okf43AE2yAOaP94GdzdJkxfiXKcsYr9IluK
\nfaoXgJKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUIGKMWXzuEd\n3fy
+1rCUwzOp9LSjtYf4e4ge\n-----END PRIVATE KEY-----",
  "type": "server",
  "update_time": "2017-02-25 09:35:27"
}
],
"instance_num": 1
}
```

● Example response 2

```
{
  "certificates": [
    {
      "description": "Push by SSL Certificate Manager",
      "domain": null,
      "id": "ed40e8ea9957488ea82de025e35b74c0",
      "name": "certForSonar9",
      "certificate": "-----BEGIN CERTIFICATE-----
MIIFizCCBHOgAwIBAgIQBlQycV3bWsvsCttv5rgRjANBgkqhkiG9w0BAQsFADBu
MQswCQYDVQQGEwJVUzEVMBMGA1UEChMMRGlnaUNlcnQgSW5jMRkwFwYDVQQLEwB3
d3cuZGlnaWNLcnQuY29tMS0wKwYDVQQDEyRFBmNyeXB0aW9uIEV2ZjX5d2hlcuUg
RFYgVExTIENBIC0gRzEwHhcNMTgwNzEwMDAwMDAwWhcNMTkwNzEwMTIwMDAwWjAU
MRlWEAYDVQQDEwlpY2UxMjMudGswggEiMA0GCSqGSIb3DQEBAQUAA4IBDwAwggEK
AoIBAQCTDIQMoAvylnR6X1dihhNwbdGesbMW6NZX7ffp9XrB3KcqqLxz14VmH9
PntvprLJNeolgLqDZzc4zKbUkmqxY1dvGDs41coKzdtc9lq23GVK48wfsnk5r50
afyU52R1JISHDOhiDhHOSyhrOzc2GreLrByWKFUaAue6rTnyMbzQaSPtrAqsURZ
wcmJ6R3A6JwokOgxXBSu41ufPQIFkMgxygKxEBLzLjLjRqCXQHyoXbsTyoIb6jwp
w4H6vcRIEcFags98ApWRoEKjy7eOP3UUm05F+OkOvXhrxEqIPm/rlwE0PmVlmm9
DgBaFyb3xT/MtT2VRSfCJQHglcsdAgMBAAGjggJ9MIIcEtafBgNVHSMEGDAWgBRV
dE+yck/1YLpQ0dfmUVyaAYca1zAdBgNVHQ4EFgQUEFavzYXBNblHBchbaKcUKad+
qCEwIwYDVR0RBwwGolJaWNlMTIzLnRrgg13d3cuaWNlMTIzLnRrMA4GA1UdDwEB
/wQEAwIFoDAdBgNVHSEUfjAUBggrBgEFBQCDAQYIKwYBBQUHAWIwTAYDVR0gBEUw
QzA3BgIghkgBhv1sAQIwKjAoBggrBgEFBQCcARYcaHR0cHM6Ly93d3cuZGlnaWNL
cnQuY29tL0NQUzAIBgZngQwBAGewgYEGCCsGAQUFBwEBBHUwczAlBggrBgEFBQcw
aAYZaHR0cDovL29jc3AyLmRlZ2ljZXJ0LmNvbTBKBggrBgEFBQcwAoY+aHR0cDov
L2NhY2VydHMuZGlnaWNLcnQuY29tL0VUy3J5cHRpb25FdmVyeXdoZXJIRFZUTFN0
QS1HMS5jcnQwCQYDVROTBAlwADCCAQQGCisGAQQB1nkCBAIEgfUEgflA8AB2AKS5
CZC0GFgU7sTosxncAoBNZgE+RvfuON3zQ7IDdwQAAABZiOnLClIAAAQDAEcrQIh
AJX6cGXNggPdfOfdDtZpZlYr64TTrR/+b9QKKhyJ2EjBAiAWgu3BG2QK9tWQXpUN
IFadcnvqmDovabg5nmRMan2mQB2Ald1v+dZfPiMQ5lfvfNu/1aNR1Y2/0q1YMG0
6v9eolMPAAABZiOnLQEAQAQDAEcrRQIhAJVRe/7n88dD6KdhNrd4LdFjGARQNmta
Y/K2dFDXOPsfAiBOLrWW8unHOL25RWHJU7Ost3XkNhQYtrLDJrnzo/9kZzANBgkq
hkiG9w0BAQsFAAOCAQEaeqtX9cHmj4OnNAk0IGmF3nKS/u/UgGsY4EjfxWQY2bTZ
PCkqXQOA6HEX59vJ+UilTojrNDi0WskRm/8SKBHTmRwzWx3ile8KiR6ffQhPUtV
XHZcTfAfo47c7axqon8vumMLEv1PxVImivQ446K7z3kGm34dhMYxS4Gz2gTl8IKt
90OegejuhbAs5Wlvp1BK8HlYIb5+mw+cgkUC9KTAL5sqVbWzogb0bS20KaYarGcu
otcZAOMeJdBFWnpzhr1fxmjaNY4u4hrpZSTU/iBjdHapoza3zAffxysmGyqs9dR
jFyxZeR4scz8GqSTFviNdH9jvtDjkdAC5hfMaB811Q==
-----END CERTIFICATE-----
-----BEGIN CERTIFICATE-----
MIIEqjCCA5KgAwIBAgIQAnmsRYvBskWr+YBTzSybsTANBgkqhkiG9w0BAQsFADBu
MQswCQYDVQQGEwJVUzEVMBMGA1UEChMMRGlnaUNlcnQgSW5jMRkwFwYDVQQLEwB3
d3cuZGlnaWNLcnQuY29tMSAwHgYDVQQDEXdEaWdpQ2VydCBHbG9iYyYwWwUm9vdCBD
QTAeFw0xNzExMjcMjQ2MTBaFw0yNzExMjcMjQ2MTBaMG4xCzAJBgNVBAYTAiVT
MRUwEwYDVQQKEwxEaWdpQ2VydCBJbmMxGTAXBgNVBAsTEHd3dy5kaWdpY2VydC5j
b20xLTArBgNVBAMTJEVUy3J5cHRpb24gRXZlcnl3aGVyZSBEVIBUFTFMgQ0EgLSBH
MTCCASlwdQYJKoZIhvcNAQEBBQADggEPADCCAQoCggEBALPeP6wkab41dyQh6mKc
```

```
oHqt3jRlxW5MDvf9QyiOR7VfFwK656es0UFilb74N9pRntzF1UgYzDGu3ppZVMdo
lBxhm6dWS9OK/lFehKNT00YI9aqk6F+U7cA6jxSC+iDBPXwdF4rs3KRyp3aQn6pj
pp1yr7IB6Y4zv72Ee/PLZ/6rK6InC6WpK0nPV0YR7n9iDuPe1E4IxUMBH/T33+3h
yuH3dVdfgiWUOUkjdpMbyxX+XNle5uEliYBsi4ivbcTCh8ruifCII5mDXkZrnMT8n
wfYCV6v6kDdXkbgGRLKsR4pucbJtbKqIkUGxuzI2t7pfewKRc5nWecvDBZF3+p1M
pA8CAwEAAaOCAU8wggFLMB0GA1UdDgQWBRRVdE+yck/1YLpQ0dfmUVyaAYca1zAf
BgNVHSMEGDAWgBQD3IA1VtFMu2bwo+IbG8OXsj3RVTAOBgNVHQ8BAF8EBAMCAYYw
HQYDVR0LBBYwFAYIKwYBBQUHAWEGCCsGAQUFBwMCMBIGA1UdEwEB/wQIMAYBAf8C
AQAwNAYIKwYBBQUHAQEEDAmCQCGCCsGAQUFBzABhhodHRwOi8vb2Nzc5kaWdp
Y2VyY2V5b20wQgYDVR0fBDswOTA3oDWgM4YxaHR0cDovL2NybDMuZGlnaWNlcnQu
Y29tL0R2ZDZlZDZlZDZlZDZlZDZlZDZlZDZlZDZlZDZlZDZlZDZlZDZlZDZlZDZl
/WwBAJAqMCgCCsGAQUFBwIBFhxdHRwczovL3d3dy5kaWdpY2VyY2V5b20wQ1BT
MAGBmeBDAECATANBgkqhkiG9w0BAQsFAAOCAQEAK3Gp6/aGq7aBZsxf/oq/TD/B
SwW3AU4ETK+GQf2kFzYZkby55FrHdPomunx2HBzViUchGoofGgg7gHW0W3MIQAXW
M0r5LUvStcr82QDWYNPaUy4taCQmyaJ+VB+6wxHstSigOLSNF2a6vg4rgexieiV
4YSB03Yqp2t3TeZHM9ESfkus74nQyW7pRGezj+TC44xCagCQQOzzNmzEAP2SnCrJ
sNE2DpRVMnL8J6xBRdjmOsC3N6cQuKuRXbzByVBjCqAA8t1L0I+9wXJerLPyErjy
rMKWabFLmfK/AHNf4ZihwPGoc7w6UHczBZXH5RFzJNnw+WNKuTPI0HfnVH8lg==
-----END CERTIFICATE-----",
  "type": "server",
  "create_time": "2019-03-03 16:32:30",
  "private_key": "-----BEGIN RSA PRIVATE KEY-----
MIIEpQIBAAKCAQEArUw5UDKAL8ij0el9XyoYtcG3RnrGzFujWV+336Y/V6wdyggq
pccyOFZh/T57b66SyTXqJYC6g2WXOMym1JJqsWNXbxg7ONXKCs3bXPSINTxISuPM
H3rJ5Oa+dGn8lOdkdSZUhwzoYg4Rzksoazs3Nhq3i6wclihVGgLnuc058jG80Gkj
7a0wKrFEWcHJiekdwOicKJDoMVwUruNbnz0lhZDIMcoCsRAS8yCS40ag10B2KMW7
E8qjW+o8KcOB+r3ESBHBQILPFAKVkaBCo8u3jj91FtORfjpDr14a5cRKID5v65c
BND5IZZpvQ4AWn2G98U/zLU9LUUnwiUB4CHLHQIDAQABAoIBAGs5r1SompP2OwA8
virwVRVXdPUQ5oxvbuTPys+A59RxVIU8kFW+qJ4fjMYsOfRXLtOtq+5tK20YBru
1ZLVfVqAowrELXB/J2ID+WTMkLORLsNlq1kW+nC9LL6PDY98LLW/n7FoFSkGL5HT
AxFGNGUvpr2vlojuL6nGfmcM47uscJ9aP6Ijxr4p70dhPVjZBdnMnXYwRkB3dZt/
E0B/p8J5i3oo5Rucv4DOFB+01wXGAVyx5/zce+NZdhyrivkj3hHV55SxGhVWzWhj
a3dAlpKwYgflJj0inRdJYmIjBdbG2HFix7+ncBg8B2oerJXC6/fANwRGU5/LZU
5xuPVWkCgYEA6an8TY1unlGLYL5aBJ16Tx4usqMyTXr/T4zkQyftRPMt+ZuxVQHl
GHsg7XvLFNd04MBZxtkZxAYvcpOm7OUYcl0i9ZakWXXoXcBtN1Oom3gz/7RjAUnp
k+myvxCUSQ2J5z4u3QBtyPVyYnyBFXrKqdKfcYyG85+yQVHBNMvrdvMCgYEAvd0C
hFpm83ha+VQp+9XN1DYZNUyqhibj/E3X9jAn+gDbzlkxw/D9en2RlIQYUrl8+il8
QKk4cfOxJYStQfxptz8QBPVeLajDN67zJ0Rk8AB50HHHCNSU8uFkaO8KxsvjBLS
+JltqfJAeraXlinpb1Fxcg9DsQdMd6cw2DmrWa8CgYEA1UjJOuzo80i4HYWDC4Vn
OEK3o22do+WqmEVlsfsG9BH5HEdGve7V3EO/6aY+1/ZXBDPvH8mRAs9v8lbeXow7
hWCiYZfB5jre8HyOU4l8dPUCmdxhJrL913rRluASSqBlet32ztnuXCnWzp1X4nBj
/yF3UqFQKZ7SiHCDAZVW04sCgYEAj7al/BcNzlcynX2mldhdh583b4/LL+YCNm2Z
5eDHscZKmx8fLcjRpZE8dXagPqXmwjt6E1vDvQWP9m06VDNcHfHB+n00tLmidSk
evmbScaiaTRmmbJf2IThY0hIqNsc7PgKF2DTklstErOhLDFE8Z6FN6f0PiDfMcbD
Ax6L5EMCgYEA0+qhuQftKqKqGdbXX9r3H8N0TVh27ByfL3kKVYy0dUJMvsOaq6d97
8mEhYhrYt88f1sFsPM7G09XpCcBxwiKxw8+CDT9auD4r1snBnlLpqMPmanF4UDXH
L7s+4it+nlQy24P6g1PihtzsM+HD2UCerBiYUjdRK8Q9GGHdZojFk9Y=
-----END RSA PRIVATE KEY-----"
},
  "update_time": "2019-03-03 16:32:30",
  "admin_state_up": true,
  "tenant_id": "601240b9c5c94059b63d484c92cfe308",
  "expire_time": "2019-07-10 12:00:00"
},
{
  "description": null,
  "domain": "www.elb.com",
  "id": "ef4d341365754a959556576501791b19",
  "name": "certificate_28b824c8bbe419992fb7974b2911c72",
  "certificate": "-----BEGIN CERTIFICATE-----
MIIDpTCCAo2gAwIBAgIJAKdmmOBYnFvoMA0GCSqGSIb3DQEBCwUAMGkxZzA1BgNV
BAYTAh4MQswCQYDVQQIDAJ4eDELMakGA1UEBwwCeHgxZzA1BgNVBAoMAh4MQsw
CQYDVQQLEDA1eDELMakGA1UEAwwCeHgxZzA1BgNVBAMMAh4MQswCQYDVQQKDAJ4eDELMakGA1UE
b20wHhcNMTCxMjA0MDM0MjQ5WWhcNMjA1MjA0MDM0MjQ5WjBpMQswCQYDVQQGEwJ4
eDELMakGA1UECAwCeHgxZzA1BgNVBAMMAh4MQswCQYDVQQKDAJ4eDELMakGA1UE
CwwCeHgxZzA1BgNVBAMMAh4MRkwFwYJKoZIhvcNAQkBFgp4eEAXNjMuY29tMIIIB
lJANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEAWZ5UJULajW7p6FVwGRQRJFN
2s8tZ/6LC3X82fajpVsYqf1xqEuUDndDXVD09E4u83MS6HO6a3bIVQDp6/kInYld
iE6Vp8HH5BSKaCWKvG8IGWg1UM9wZFnryi14KgmplFmCu9nA8yV/6MZAe6RSdmb
```

```
3iyNBmiZ8aZhGw2pl1YwR+15MVqFFGB+7ExkziROi7L8CFCyCezK2/oOOvQsH1dz
Q8z1JXWdg8/9Zx7Ktvgwu5PQM3cJtSHX6iBPOkMU8Z8TugLlTqQXKZOEgwajwvQ5
mf2DPkVgM08XAgALJcLigwD513koAdtJd5v+9irw+5LAuO3JclqwTvw7u/YwwlD
AQABo1AwTjAdBgNVHQ4EFgQUo5A2tlu+bcUfvGTD7wmEkhXKfjcwHwYDVR0jBBgw
FoAUo5A2tlu+bcUfvGTD7wmEkhXKfjcwDAYDVR0TBAAUwAwEB/zANBgkqhkiG9w0B
AQsFAAOCAQEAWJ2rS6Mvlqk3GfEpbuezx2J3X7l1z8Sxoqg6ntwB+rezvK3mc9H0
83qcVeUcoH+0A0ISHyFN4FvRQL6X1hEheHarYwJK4agb231vb5erasuGO463eYEG
r4SfTuOm7SviV2xxbaBKrXJtpBp4WLL/s+LF+nklKjaOxkmxUX0sM4CTA7uFJypY
c8Tdr8LDDNqoUtMD8BRUCJi+7lmMXRcC3Qi3oZJW76ja+kZA5mKVFPd1ATih8TbA
i34R7EQDtFeiSvBdeKRspP8c0KT8H1B4lXNkkCQs2WX5p4lm99+ZtLD4glw8x6lc
i1YhgnQbn5E0hz55OLu5jvOkKQjPCW+8Kg==
-----END CERTIFICATE-----",
  "type": "server",
  "create_time": "2018-09-28 03:00:47",
  "private_key": "-----BEGIN RSA PRIVATE KEY-----
MIIeowIBAAKCAQEAWZ5UJULAJwR7p6FVwGRQRjFN2s8tZ/6LC3X82fajpVsYqF1x
qEuUDndDXVD09E4u83MS6HO6a3bIVQDp6/klNylDiE6Vp8HH5BSKaCWKvG8lGWg1
UM9wZFnryi14KgmplFmCu9nA8yV/6MZAe6R5Dmb3iyNBmiZ8aZhGw2pl1YwR+15
MVqFFGB+7ExkziROi7L8CFCyCezK2/oOOvQsH1dzQ8z1JXWdg8/9Zx7Ktvgwu5PQ
M3cJtSHX6iBPOkMU8Z8TugLlTqQXKZOEgwajwvQ5mf2DPkVgM08XAgALJcLigwD5
13koAdtJd5v+9irw+5LAuO3JclqwTvw7u/YwwlDAQABAoIBACU9S5fjD9/JTmXA
DRs08A+gGgZUxLn0xk+NAPX3LyB1tfdkCaFB8BccLzO6h3KZuwQOBPv6jkdvEdbx
Nwyw3eA/9GJslvKiHc0rejdyPymaw9I8MA7NbXHajrY7KpqDQyK6sx+aUTcy5jg
iMXLWdwXYHhJ/1HVOo603oZyiS6HZeYU089NDUcX+1Sji3e5Ke0gPVXEqCq1O11/
rh24bMxnxZo4PKBWdcMBN5Zf/4ij9vrZE+fFzW7vGBO48A5lvZxWU2U5t/OZQRtN
1uLOHmMFa0FIF2aWbTVfwdUWAFsvAOKHj9Vv8BXOUwKOUuEktdkfAlvrmsFrO/H
yDeYYPkCgYEA/S55CBbR0sMXpSZ56uRn8JHApZJhgkgvYr+FqDUq/e92nAzf01P
roEBUajwrnf1ycevN/SDfbtWzq2XJGqhWdJmtpO16b7KBsC6BdRcH6dnOYh31jgA
vABMIP3wzI4zSVTyxRE8LDuboytF1mSceV5tHYPQTZnwrplDnLQhywCgYEAw8Yc
Uk/eiFr3hfH/ZohMfV5p82Qp7DNIGRzw8YtVG/3+vNXrAXW1VhugNhQY6L+zLtJC
aKn84ooup0m3YCg0hviNqIuvzfsuzQgtjTXyaE0cEwsjUusOmiuj09vVx/3U7siK
Hdj2ICPCvQ6Q8tdi8jV320gMs05AtaBkZdsiWUCgYEAAtLw4Kk4f+xTKDFsrLUNf
75wcqhWVBiwBp7yQ7UX4EysJPKZcHMRTk0EEcAbpyaJZE3I44vjp5ReXIHNLmFps
uvl34J4Rfot0LN3n7cFrAi2+wpNo+MOBwrNzpRmijGP2uKKrq4JiMjFbKV/6utGF
Up7VxfwS904JYpGgZctiECgYA1A6nZtF0riY6ry/uaAdXpZHL8ONNqRZtWoT0kD
79otSVu5lSiRbaGcXsDExC52oKrSDAgFtbqQUiEOFG09UcXfoR6HwRkba2CiDwve
yHQLQI5Qrdxz8Mk0glrNrSM4FAmcW9vi9z4KCbQyoC5C+4gqeUURPDIkQBWP2Y4
2ct/bQKbGhV8qCsQTzphOxc31BJPa2xVhuv18cEU3XLUrVfUZ/1f43JhLp7gynS2
ep++LkUi9D0VGXY8bqvfJjbeCoCeU85vl8NpCXwe/LoVoln+7KaVIZMwqoGMfgNL
nEqm7HWkNxHhf8A6En/IjleuddS1sf9e/x+TJN1Xhnt9W6pe7Fk1
-----END RSA PRIVATE KEY-----",
  "update_time": "2018-09-28 03:00:47",
  "admin_state_up": true,
  "tenant_id": "601240b9c5c94059b63d484c92cfe308",
  "expire_time": "2020-12-03 03:42:49"
}
],
"instance_num": 2
}
```

Status Code

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

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 | Mandatory | Type | Description |
|----------------|-----------|--------|-------------------------------|
| project_id | Yes | String | Specifies the project ID. |
| certificate_id | Yes | String | 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. |

| Parameter | Type | Description |
|-------------|--------|---|
| type | String | Specifies the certificate type. The value range varies depending on the protocol of the backend server group: <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. |

Example Request

- Example request: Querying details of a certificate
GET <https://{{Endpoint}}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/certificates/23ef9aad4ecb463580476d324a6c71af>

Example Response

- Example response 1

```
{
  "certificate":
  "-----BEGIN CERTIFICATE-----
  \nMIIC4TCCAcmgAwIBAgICEREwDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
  \nb21wYW55IENBMB4XDTE4MDcwMjEzMDU0N1oXDTE4MTExNzEzMDU0N1owFDESMBAG
  \nA1UEAwwJbG9jYWxob3N0MIIIBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
  \n0FQGzi3ucTX+DNud1p/b4XVM6I3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5
  \nU0NqPQZKUrz3rQeLN9mYiUTJZPutYIFDDbB8CtIgv+eyU9yYJslWx/Bm5kWNPh9
```

```
\n7B9Yu9ppb2u6zDA99IC4ekKD93KuzlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\nlAzlsx+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/K
\ny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPILZUUn7yw3nkOOTLMI28IEv0WY
\nYd7CMJQkS1NPJBKNOGfR/wIDAQABozowODAhBgNVHREEGjAYggpbk21hW4uY29t
\nhwQKuUvJhwR/AAABMBMGA1UdJQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBcWUA
\nA4IBAQA8IMQJxaTey7EjXtRlSVIEAMftAQP6GjjNQUVlBQYUDauDT4W2XUZ5wAn
\njiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKIOdl9I598TGKl6OoDa
\nnezmcwQYtHBMVQ4c7Ml8554Ft1mWst4dMAK2rzNYjvPRLylzp1HMnl6hkjPk4PCZ
\nwKnhadlScati9CCt3UzXSNJOSLaKdHErH08lqd+1BchScxCfk0xNlTn1HZZGml
\n+vbmunok3A2lucl14rnrcbkGYqGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/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": "a31d2bdcf7604c0faadb058e1e08819",
  "admin_state_up": true,
  "name": "https_certificate",
  "private_key":
"-----BEGIN PRIVATE KEY-----
\nMIIEvglBADANBgkqhkiG9w0BAQEFAASCBAKgwggSkAgEAAoIBAQQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4J+B7KYwsMhRcgdcJ8KcN1nfzTv12ksXITQ2o9BkpStnPe
\n\ntB4s32ZiJRMlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\n\nMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lCq39buNplgDOWzEP5AzqXt
\n\nCOFYn6RTH5SRug4hKNN7sT1eYMsIHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl
\n\nZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwlCRLU08k
\n\nEo04Z9H/AgMBAECCggEAEleaQqHCWZk/HyYN0Am/JSGFa2tD60SXY2fUieh8/Hl
\n\nfvCarftGgMaYWPSNCRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFgZjv5OQB
\n\nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSEtq8YaXngBO6vES9LMhHkNKKr
\n\nnciu9YklnNEHu6uRj5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
\n\nEGpfYI6AdHIwFZcT/RNAxhP82lg2gUJSgAu66FfDjMwQXKbafKdP3zq4Up8a7Ale
\n\nnkrgruPtfV1vWklg+bUfhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\n\nXUqgCZ08MKeV2jf2drlxRRwRl33SksQbzAQ/qrLdT7GP3sCGqvkwWY2FPdFy8kx
\n\nGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpp7dt
\n\nJ7n8EzkRUNE6alMHOfEeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
\n\nniWgTWHXPZxUQaYhpjXo6+LMI6DpExiDgBAkMzJGlvS7yQiyWU+wthArurbWYdGZ
\n\nlS6VjoTkF6r7VZolLXX0fbuXh6lm8K8lQRfBpJff56p9phMwaBpDNDrfpHB5utBU
\n\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
\n\nl1VQhELG9CbKSdzKM71GyElmix/T7FnJSHIWLho1qVo6AQyduNWnAQD15pr8KAd
\n\nXGAZZ1FQcb3KYa+2fflERmazedOTWjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKBgDak
\n\n/735uP20KKqhNehZpC2dJei7OilgRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
\n\nnfl7FPMdvGl8ioYbvlHFh+X0Xs9r1S8yeWnHoXMB6eXWmYKMJrAoveLa+2cFm1Agf
\n\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLaOGBAJkD4wHW54PwD4Ctfk9o
\n\nnjHjWB7pQlUYpTZO9dm+4fpCMn9Okf43AE2yAOaAP94GdzdDjKxfciXKcsYr9lluk
\n\nfaoXgjkR7p1zERiWZuFF635B4aiyX1H7IX0MwHDZQO38a5gZaOm/BUlGKMwZxuEd
\n\n3fy+1rCUwzOp9LSjtYf4ege
\n\n-----END PRIVATE KEY-----",
  "type": "server",
  "update_time": "2017-02-25 09:35:27"
}
```

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>The value range varies depending on the protocol of the backend server group:</p> <ul style="list-style-type: none">• A common domain name contains 0 to 100 characters and consists of several labels separated by dots (.). 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> |

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_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 range varies depending on the protocol of the backend server group: <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. |

| Parameter | Type | Description |
|-------------|--------|---|
| 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. |

Example Request

- Example request: Updating a certificate
PUT <https://{Endpoint}/v2/a31d2bdcf7604c0faaddb058e1e08819/elb/certificates/23ef9aad4ecb463580476d324a6c71af>

```
{
  "certificate":
  "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgICEREWdQYJKoZIhvcNAQELBQAwwFzEVMBMGA1UEAxMMTXID
\nb21wYW55IENBMB4XDTE4MDcwMjEzMTU0N1oXDTQ1MTEwNzEzMTU0N1owFDESMBAG
\nA1UEAwJbG9jYWxob3N0MIIIBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA
\n0FQGzi3ucTX+DNud1p/b4XVM6I3rY7+Cfge5GMLDIUXIHXCfCgp19Z3807yNpLF5
\nU0NqPQZKUrZz3rQeLN9mYiUTJZPutYIFDDbB8CtIgv+eyU9yYJslWx/Bm5kWNPh9
\n7B9Yu9pbp2u6zDA99IC4ekKD93KuzxlnLmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\nlAzlsxD+QM6l7QjhWJ+kUx+kboOISjTe7E9XmDLJR7u8LRAQyLYKy4zgnv1tn/K
\ny09cxLKAftgoZWQD2FAZJf9F7k1kYNwqlTz3CPILZUUn7yw3nkOOTLMI28IEv0Wy
\nYd7CMJQkS1NPJBKN0GFR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\nnhwQKuUvJhwr/AAABMBMGA1UdJQMMAoGCCsGAQUFBwMBMA0GCsGSIb3DQEBwCWA
\nA4IBAQA8lMQxaTey7EjXtRLSVLEAMftAQPG6jjjNQUVIBQYUDauDT4W2XUZ5wAn
\nnjiOyQ83va672K1G9s8n6xLH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
\nnezmcCwQYtHBMVQ4c7Ml8554Ft1mWSt4dMAK2rzNYjvPRLYLzp1HMnl6hkjPk4PCZ
\nnwKna0dlScati9Cct3UzXSNJOSLalKdHERH08lqd+1BchScxCfk0xNITn1HZZZGml
\n+vbmunok3A2luc14rnsrbcKGYqxGikySN6B2cRLBDK4Y3wChiW6NVVtVqcx5/mZ
\nniYsGDVN+9QBd0eYUHce+77s96i3l
\n-----END CERTIFICATE-----",
  "description": "description for certificate",
  "domain": "www.elb.com",
  "name": "https_certificate",
  "private_key":
  "-----BEGIN PRIVATE KEY-----
\nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetv4J+B7kYwsMhRcgdcj8KCNx1nfzTvl2ksXITQ2o9BkpStnPe
\nB4s32ZiJRMlk+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nMD30gLh6QoP3cq7PGWcuZKV7hjd1tjCTQukwMvqV8lCq39buNplgDOWzEP5AzcXt
\nCOFYn6RTH5SRug4hKNN7sT1eYMSlHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl
\nZAPYUBkl/0XuTWRg3CohPPcl+UtlRSfvLDeeQ460swjbgwS/RbJh3slwlCRLU08k
\nEo04Z9H/AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\nfvfCARftGgMaYWP5SNCJRMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUSHFgZjv5OQB
\nZVe4a5Hj1OcgYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
\nnciu9YklnNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M
\nEGpfYI6AdHlwFzCT/RNAXhP82lg2gUJSgAu66FFdJmWQXKbafKdP3zq4Up8a7Ale
\nnkrguPtfV1vWklg+bUfhgGaiAEYTpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\nXUqgCZo8MKeV2jf2drlxRRwRl33SksQbzAQ/qrLdT7GP3sCGqvkxWY2FPdFyF8kx
\nGcCeZPcleZYCQAM41pjtsaM8tVbLWVR8UtGbuQoPSPH7JNF3Tm/JH/fbwjP7dt
\nJ7n8EzkRUNE6alMHOFeych/PQKbGQDmf1bMogx63rTcwQ0PEZ9Vt7mTgKYK4aLr
```

```

\niWgTWHXPzUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
\nS6VjoTkF6r7VZolLXX0fbuXh6lm8K8lQRfBpJff56p9pMwaBpDNDrfpHB5utBU
\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
\n1lVQhELG9CbKsDzKM71GyElmix/T7FnJSHIWLho1qVo6AQyduNWNnAQD15pr8KAd
\nXGAZZ1FQcb3KYa+2fflERmzdOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKbGdK
\n/735uP20KKqhNehZpC2dJei7OilRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha
\nfl7FPMdvGl8ioYbvlHFH+X0Xs9r1S8yeWnHoXMB6eXWmYKMJrAoveLa+2cFm1Agf
\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLaOGBAJkD4wHW54PwD4Ctfk9o
\njHjWB7pQLUYpTZO9dm+4fCMn9Okf43AE2yAOaAP94GdzdDjKxfciXKcsYr9lIuk
\nfaoXgjKR7p1zERiWZuFF63SB4aiyX1H7IX0MwHDZQO38a5gZaOm/BUlGKMWXzuEd
\n3fy+1rCUwzOp9LSjtYf4ege
\n-----END PRIVATE KEY-----"
}

```

Example Response

- Example response 1

```

{
  "certificate": "-----BEGIN CERTIFICATE-----
\nMIIC4TCCAcmgAwIBAgIcERewDQYJKoZIhvcNAQELBQAwFzEVMBMGA1UEAxMMTXID
\nb21wYW51ENBMB4XDTE4MDcwMjEzZjU0N1oXDTE4MTExNzEzZjU0N1owFDESMBAG
\nA1UEAwJbG9jYWxob3N0MIIlBjANBgkqhkiG9w0BAQEFAAOCAQ8AMIIBCgKCAQEA\n+DNud1p/
b4XVM6l3rY7+Cfge5GMLDIUXIHXCfGp19Z3807yNpLF5\nU0N0nqPQZKUrZz3rQeLN9mYiUTJZPutYlFDDb
B8CtIgv+eyU9yYJslWx/
Bm5kWNPh9\n7B9YU9pbp2u6zDA99IC4ekKD93KuzxlnmSle4Y3dbYwk0LpMDL6lfCHKt/W7jaS
\nnAzlsxD+QM6l7QjhWJ+kUx+UkboOISjTe7E9XmDLJR7u8LRAQylyKy4zgnv1tn/K
\ny09cxlKAftgoZWQD2FAZJf9F7k1kYNwqITz3CPILLZUUn7yw3nkOOTLMI28IEv0WY
\nYd7CMJQkS1NPJBKNOGFR/wIDAQABozowODAhBgNVHREEGjAYggpkb21haW4uY29t
\nnhwQKuUvJhwr/AAABMBMGA1UdJQMMMAoGCCsGAQUFBwMBMA0GCsqGSIb3DQEBcWUA
\nA4IBAQA8lMQxaTey7EjXtRSLVIEAMftAQP6GijNQuvIBQYUDauDT4W2XU25wAn
\nnjiOyQ83va672K1G9s8n6xlH+xwwdSNnozaKzC87vwSeZKIOdl9I5I98TGKI6OoDa
\nnezmzCwQYtHBMVQ4c7ML8554Ft1mWSt4dMAK2rzNYjvPRLYLzp1HmNl6hkjPk4PCZ
\nnwKna0dlScati9CCt3UzXSNJOSLalKdHErH08lqd+1BchScxChk0xNITn1HZZGml\n
+vbmunok3A2lucl14nrsrbkGyqxGikySN6B2cRLBDK4Y3wChiW6NVYtVqcx5/mZ\niYsGDVN
+9QBd0eYUHce+77s96i3l\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-----
\nMIIEvgIBADANBgkqhkiG9w0BAQEFAASCBKgwggSkAgEAAoIBAQDQVAbOLe5xNf4M
\n253Wn9vhdUzojetjv4J+B7kYwsMhRcgdcJ8KcN1nfzTvl2ksXITQ2o9BkpStrPe\nntB4s32ZiJRMlk
+61iUUMNsHwK2WBX57JT3JgmyVbH8GbmRY0+H3sH1i72luna7rM
\nMD30gLh6QoP3cq7PGWcuZKV7hd1tjCTQukwMvqV8lCq39buNplgDOWzEP5AqzXt
\nCOFYn6RTH5SRug4hKNN7sT1eYmSlHu7wtEBDKVgrLjOCe/W2f8rLT1zEsoAW2Chl\n\nZAPYUBkl/
0XuTWRg3CohPPcl+UtlRSfvLDDeeQ460swjbgwS/RbJh3slwLCRLU08k\nnEo04Z9H/
AgMBAAECggEAEleaQqHCWZk/HyYN0Am/GJSGFa2tD60SXY2fUieh8/Hl
\nfvfCARftGgMaYWPSNCRJMXB7tPwpQu19esjz4Z/cR2Je4fTLPrffGUshFgZjv5OQB
\nZVe4a5Hj1OcgJYhwCqPs2d9i2wToYNBbcfgh8lSETq8YaXngBO6vES9LMhHkNKKr
\nnciu9YklnNEHu6uRJ5g/eGGX3KQynTvVlhnOVGAJvjTXcoU6fm7gYdHAD6jk9lc9M\n\nEGpfYI6AdHlWFZcT/
RNAxhP82lg2gUJsgAu66FfdjMwQXKbafKdP3zq4Up8a7Ale\nnkrguPtfV1vWklg
+bUfhgGaiAEYtpAUN9t2DVliijgQKBgQDnYMMsaF0r557CM1CT
\nXUqgCZo8MKeV2jf2drLxRRwRL33SksQbzAQ/qrLd7GP3csCGqvKxWY2FPdFyF8kx
\nGcCeZPcleZYQAM41pjtsaM8tVbLWVR8UtGBuQoPSph7JNF3Tm/JH/fbwjpp7dt
\nJ7n8EzkRUNE6alMHOFeeych/PQKBgQDmf1bMogx63rTcwQ0PEZ9vt7mTgKYK4aLr
\niWgTWHXPzUQaYhpjXo6+IMI6DpExiDgBAkMzJGlvS7yQiYWU+wthAr9urbWYdGZ
\nS6VjoTkF6r7VZolLXX0fbuXh6lm8K8lQRfBpJff56p9pMwaBpDNDrfpHB5utBU
\nxs40yldp6wKBgQC69Cp/xUwTX7GdxQzEJctYiKnBHKcspAg38zJf3bGSXU/jR4eB
\n1lVQhELG9CbKsDzKM71GyElmix/T7FnJSHIWLho1qVo6AQyduNWNnAQD15pr8KAd
\nXGAZZ1FQcb3KYa+2fflERmzdOTwjYZ0tGqZnXkEeMdSLkmqlCRigWhGQKbGdK\n\n/735uP20KKqhNehZpC2dJei7OilRhCS/dKASUXHSW4fptBnUxACYocdDxtY4Vha\n\nfl7FPMdvGl8ioYbvlHFH+X0Xs9r1S8yeWnHoXMB6eXWmYKMJrAoveLa+2cFm1Agf

```



```
\n7nLhA4R4lqm9lpV6SKegDUkR4fxp9pPyodZPqBLLAoGBAJkD4wHW54Pwd4Ctfk9o
\njHjWB7pQlUYpTZO9dm+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/a31d2bdcf7604c0faadbb058e1e08819/elb/certificates/
23ef9aad4ecb463580476d324a6c71af

Example Response

- Example response

None

Status Code

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

6 API (OpenStack API)

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 10 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 | Mandatory | Type | Description |
|-----------------|-----------|--------|--|
| project_id | Yes | String | Specifies the ID of the project where the tag is used. |
| loadbalancer_id | Yes | String | Specifies the ID of the load balancer to which a tag is to be added. |

Request Parameters

Table 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 36 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 43 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 10 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 36 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 43 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 10 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 | Mandator y | 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 36 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 43 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 36 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 43 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 36 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 43 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 10 keys are allowed for each query operation, and each key can have a maximum of 10 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 127 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 127 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 10 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 36 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 43 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 10 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 36 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 43 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 10 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 36 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 43 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 36 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 43 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 | Lists the tags, which are aggregated by the tag key. For details, see Table 6-50 . 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"]. |

Table 6-50 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 36 characters. The tag key of a listener must be unique. |
| values | Array | Lists the tag values. <ul style="list-style-type: none"> Can contain a maximum of 43 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 | Specifies the included tags. A maximum of 10 tag keys are allowed for each query operation. Each tag key can have up to 10 tag values. The structure body must be included. 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 6-54 . |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|---------|--|
| 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 127 Unicode characters and cannot be left blank. (This parameter is not verified in the search process.) |

| Parameter | Mandatory | Type | Description |
|-----------|-----------|-------|--|
| 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. |
| resource_detail | String | Specifies the resource details. The value is a resource object, used for extension. The value is left blank by default. |

| Parameter | Type | Description |
|-------------------|--------|--|
| 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 127 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. |
| 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. |

| Status Code | Error Code | Description | Error Message | Measure |
|-------------|------------|--|---|---|
| 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 unum of 10. | Reduce the number of tags. |
| 400 | VPC.1814 | The total number of existing tags and newly added tags exceeds 10. | Invalid input for operation: resource_id: XXXX, number of tags exceed max num of 10. | Reduce the number of tags. |
| 400 | VPC.1814 | The key values of newly added tags are duplicate. | Invalid input for operation: tags key is duplicated. | Change the tag values. |
| 400 | VPC.1814 | The resource ID does not exist. | Resource XXX XXX could not be found. | Check whether the resource is available. |
| 400 | VPC.1814 | The specified key to be deleted does not exist, or the key is an empty string. | The resource could not be found. | Enter a correct key and send the request again. |

| Status Code | Error Code | Description | Error Message | Measure |
|-------------|------------|--|--|---|
| 400 | VPC.1814 | More than 10 tags are added to a specified resource. | Invalid input for operation:resource_id:xxx, number of tags exceeds maximum 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 | √ | √ |

| Permissi on | 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

| Permis sion | 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.

8 Appendix

8.1 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 | Update request parameters error, name is too long. | The load balancer name exceeds the length limit. | Change the name. |
| 400 | ELB.1031 | Request parameters error, lb len description too long. | The load balancer description exceeds the length limit. | Change the description. |
| 400 | ELB.1035 | Update request parameters error, name is not valid. | Invalid load balancer name. | Change the name. |
| 400 | ELB.1041 | Request parameters error, lb type is not valid. | Invalid load balancer type. | Change the parameter settings. |
| 400 | ELB.1045 | Update request parameters error, description too long. | The load balancer description exceeds the length limit. | Change the description. |

| Status Code | Error Codes | Error Message | Description | Solution |
|-------------|-------------|---|--|----------------------------------|
| 400 | ELB.1051 | Request parameters error, lb bandwidth is not valid. | Invalid bandwidth configured for the load balancer. | Modify the bandwidth. |
| 400 | ELB.1061 | Request parameters error, lb vip_address and vip_subnet_id are nil. | The EIP or subnet ID is left blank. | Enter a valid EIP or subnet ID. |
| 400 | ELB.1071 | Request parameters error, lb vip_address is not valid. | Invalid EIP. | Enter a valid EIP. |
| 400 | ELB.1081 | Request parameters error, lb vpc_id is empty. | The VPC ID is left blank. | Enter a valid VPC ID. |
| 400 | ELB.1101 | Vip address is exist. | The EIP already exists. | Enter another EIP. |
| 400 | ELB.1110 | version not found. | The API version does not exist. | Contact customer service. |
| 400 | ELB.1201 | Get Token failed | Failed to obtain the token. | Contact customer service. |
| 400 | ELB.1202 | enterprise_project_id can not be empty | An error occurred during the verification of ep_id. | Check the enterprise project ID. |
| 400 | ELB.1204 | Bind fail. | Failed to associate the load balancer with the enterprise project. | Contact customer service. |

| Status Code | Error Codes | Error Message | Description | Solution |
|-------------|-------------|---|---|--|
| 400 | ELB.2002 | Delete member input param error. | Failed to remove the backend server because the parameters are invalid. | Change the parameter settings. |
| 400 | ELB.2003 | Query member failed. | Failed to query the backend server. | Contact customer service. |
| 400 | ELB.2005 | Update member failed. | Failed to update the backend server. | Contact customer service. |
| 400 | ELB.2010 | Member listener ID length is not correct. | The listener ID exceeds the length limit. | Change the listener ID. |
| 400 | ELB.2011 | Add member listener is not exist. | The listener does not exist. | Ensure that the listener exists. |
| 400 | ELB.2012 | This member is not exist. | The backend server does not exist. | Ensure that the backend server exists. |
| 400 | ELB.2020 | Member listener ID content is not correct. | Invalid listener ID. | Change the listener ID. |
| 400 | ELB.2021 | Request parameters error, member address is null. | Invalid backend server IP address. | Check the backend server IP address. |
| 400 | ELB.3001 | Create floating IP failed. | Failed to assign the EIP. | Contact customer service. |
| 400 | ELB.3002 | Delete floating IP failed. | Failed to release the EIP. | Contact customer service. |

| Status Code | Error Codes | Error Message | Description | Solution |
|-------------|-------------|--|--|--------------------------------------|
| 400 | ELB.3003 | Query floating IP failed. | Failed to query the EIP. | Contact customer service. |
| 400 | ELB.3004 | Query floating IP list failed. | Failed to query EIPs. | Contact customer service. |
| 400 | ELB.4001 | Create elastic IP failed. | Failed to assign the EIP. | Contact customer service. |
| 400 | ELB.4002 | Delete elastic IP failed. | Failed to release the EIP. | Contact customer service. |
| 400 | ELB.4003 | Query elastic IP failed. | Failed to query the EIP. | Contact customer service. |
| 400 | ELB.4004 | Query elastic IP list failed. | Failed to query EIPs. | Contact customer service. |
| 400 | ELB.4005 | Update elastic IP failed. | Failed to update the EIP. | Contact customer service. |
| 400 | ELB.5002 | Failed to delete the certificate. | Failed to delete the certificate. | Contact customer service. |
| 400 | ELB.5003 | Query bandwidth failed. | Failed to query the bandwidth. | Contact customer service. |
| 400 | ELB.5004 | Invalid search criteria. | Invalid query condition. | Change the query condition. |
| 400 | ELB.5005 | Update bandwidth failed. | Failed to modify the bandwidth. | Contact customer service. |
| 400 | ELB.5013 | Private_key or certificate content is not valid. | Invalid public or private key of the server certificate. | Enter a valid public or private key. |
| 400 | ELB.5020 | The certificate ID must be 32 characters. | The certificate ID is not a 32-character string. | Enter a valid certificate ID. |
| 400 | ELB.5033 | Failed to update certificate. | Failed to modify the certificate. | Contact customer service. |

| Status Code | Error Codes | Error Message | Description | Solution |
|-------------|-------------|---|---|--|
| 400 | ELB.5040 | The certificate does not exist. | The certificate does not exist. | Ensure that the certificate exists. |
| 400 | ELB.5051 | CA certificate content is not valid. | Invalid CA certificate body. | Enter a valid certificate body. |
| 400 | ELB.5053 | CA certificate content is not valid. | Invalid CA certificate body. | Enter a valid certificate body. |
| 400 | ELB.5131 | Failed to query the certificate quota. | Failed to query the certificate quota. | Contact customer service. |
| 400 | ELB.5141 | Failed to query the user certificate quota. | Failed to query the used certificate quota. | Contact customer service. |
| 400 | ELB.5151 | The certificate quantity exceeds the quota. | The certificate quota has been used up. | Delete the certificates that are no longer used or request a higher quota. |
| 400 | ELB.6010 | Listener ID content is not correct. | Invalid listener ID. | Change the listener ID. |
| 400 | ELB.6011 | Request parameters error, listener name too long. | The listener name exceeds the length limit. | Change the name. |
| 400 | ELB.6015 | This listener property cannot be updated | The listener property cannot be modified. | Select a property that can be modified. |
| 400 | ELB.6021 | Request parameters error, listener name is not valid. | Invalid listener name. | Change the name. |

| Status Code | Error Codes | Error Message | Description | Solution |
|-------------|-------------|---|--|-----------------------------|
| 400 | ELB.6025 | Update request parameters error, listener len name too long. | The listener name exceeds the length limit. | Change the name. |
| 400 | ELB.6030 | Listener is not associated with loadbalancer id. | The listener does not belong to any load balancer. | Check the listener ID. |
| 400 | ELB.6031 | Request parameters error, listener len description too long. | The listener description exceeds the length limit. | Change the description. |
| 400 | ELB.6035 | Update request parameters error, listener name is not valid. | Invalid listener name. | Change the name. |
| 400 | ELB.6040 | The loadbalancer that the listener belongs to is not exist. | The load balancer to which the listener is added does not exist. | Check the load balancer ID. |
| 400 | ELB.6041 | Request parameters error, listener port is not in 1 ~ 65535. | Invalid port number. | Change the port number. |
| 400 | ELB.6045 | Update request parameters error, listener len description too long. | The listener description exceeds the length limit. | Change the description. |

| Status Code | Error Codes | Error Message | Description | Solution |
|-------------|-------------|---|--|--------------------------------------|
| 400 | ELB.6051 | Request parameters error, listener lb algorithm is not valid. | Invalid load balancing algorithm. | Change the load balancing algorithm. |
| 400 | ELB.6061 | Request parameters error, listener protocol is not valid. | Invalid listener protocol. | Change the protocol. |
| 400 | ELB.6071 | Request parameters error, listener backend protocol is not valid. | Invalid backend server protocol. | Change the protocol. |
| 400 | ELB.6200 | Load Balancer *** already has a listener with protocol_port of ***. | The port number is in use. | Change the port number. |
| 400 | ELB.7000 | Listener_id must not be null. | The listener ID is left blank. | Change the listener ID. |
| 400 | ELB.7001 | Healthcheck_interval is illegal. | Invalid query condition. | Change the query condition. |
| 400 | ELB.7002 | Healthcheck delete condition is not valid. | Invalid query condition. | Change the query condition. |
| 400 | ELB.7004 | Healthcheck query condition is not valid. | Invalid query condition. | Change the query condition. |
| 400 | ELB.7010 | Healthcheck listener is not exist. | The listener with which the health check is associated does not exist. | Change the listener ID. |

| Status Code | Error Codes | Error Message | Description | Solution |
|-------------|-------------|---|---|-----------------------------|
| 400 | ELB.7014 | Healthcheck configuration not exist. | The health check does not exist. | Check the health check ID. |
| 400 | ELB.7020 | This healthcheck is not exist. | The health check does not exist. | Change the health check ID. |
| 400 | ELB.8001 | Create a SG error. | Failed to create the security group. | Contact customer service. |
| 400 | ELB.8101 | Create VPC error. | Failed to create the VPC. | Contact customer service. |
| 400 | ELB.8102 | Delete VPC error. | Failed to delete the VPC. | Contact customer service. |
| 400 | ELB.8103 | Query VPC error. | Failed to query the VPC. | Contact customer service. |
| 400 | ELB.8201 | Create subnet error. | Failed to create the subnet. | Contact customer service. |
| 400 | ELB.8202 | Delete subnet error. | Failed to delete the subnet. | Contact customer service. |
| 400 | ELB.8203 | Query subnet error. | Failed to query the subnet. | Contact customer service. |
| 400 | ELB.8902 | Invalid input for '%s' is not in %s. | Invalid input parameters. | Check input parameters. |
| 400 | ELB.8909 | Certificate with multi domain not supported by guaranteed listener. | Multiple domain certificate is not supported by dedicated loadbalancer. | Check input parameters. |

| Status Code | Error Codes | Error Message | Description | Solution |
|-------------|-------------|--|--|---|
| 400 | ELB.8938 | The ip member just support when pool's protocol is %s. | Invalid input parameters. | Change the value of pool_id in url to other supported pool or pass parameter 'subnet_cidr_id' when create member. |
| 400 | ELB.8939 | The loadbalancer's ip_target_enable must be true when add ip member. | Invalid input parameters. | Disable ip target of the loadbalancer or pass parameter 'subnet_cidr_id' when create member. |
| 400 | ELB.8950 | Cannot allocate resource for the loadbalancer. | Cannot allocate resource for the loadbalancer. | Contact customer service. |
| 400 | ELB.8959 | The %s flavor field does not support update from %s to %s. | Invalid input parameters when updating flavor. | Check input parameters. |
| 400 | ELB.9001 | Interval ELB create VM error. | Failed to create the VM. | Contact customer service. |
| 400 | ELB.9002 | Internal ELB delete VM error. | Failed to delete the VM. | Contact customer service. |
| 400 | ELB.9003 | Internal ELB query VM error. | Failed to query details of the VM. | Contact customer service. |
| 400 | ELB.9006 | Internal ELB update port fail. | Failed to update the port bound to the VM. | Contact customer service. |
| 400 | ELB.9007 | Internal ELB bind port fail. | Failed to bind the port to the VM. | Contact customer service. |

| Status Code | Error Codes | Error Message | Description | Solution |
|-------------|-------------|---|--|--|
| 400 | ELB.9023 | Internal ELB get image error. | Failed to query the image. | Contact customer service. |
| 400 | ELB.9033 | Internal ELB get flavour error. | Failed to query the VM specifications. | Contact customer service. |
| 400 | ELB.9043 | Internal ELB get interface error. | Failed to query the port bound to the VM. | Contact customer service. |
| 400 | ELB.9061 | Internal ELB query topic fail. | Failed to query the SMN topic. | Contact customer service. |
| 400 | ELB.9062 | Internal ELB create topic fail. | Failed to create the SMN topic. | Contact customer service. |
| 400 | ELB.9063 | Internal ELB query subscription fail. | Failed to query the SMN subscription. | Contact customer service. |
| 400 | ELB.9064 | Internal ELB create subscription fail. | Failed to create the SMN subscription. | Contact customer service. |
| 400 | ELB.9800 | Resource could not be found. | The specified load balancer does not exist when ep_id is queried. | Ensure that the load balancer belongs to the enterprise project. |
| 400 | ELB.9801 | Not be list action, enterprise_project_id must not be null. | In fine-grained authorization, the enterprise ID is not passed in the request for querying load balancers. | Ensure that the parameters in the request for querying load balancers are correct. |

| Status Code | Error Codes | Error Message | Description | Solution |
|-------------|-------------|---|---|--|
| 400 | ELB.9805 | RequestBody listener[protocol] is null, this is a required parameter. | ep_id in the URI is not a valid UUID. | Check the enterprise project ID. |
| 400 | ELB.9807 | Quota exceeded for resources: %s | No enough quota for resource. | Contact customer to expand quota. |
| 400 | ELB.9899 | Invalid parameter. For details about the error, see the returned information. | Invalid parameter. For details about the error, see the returned information. | Please check parameters. |
| 401 | ELB.1103 | Token invalid | Invalid token. | Contact customer service. |
| 401 | ELB.1104 | Token invalid | Invalid token. | Contact customer service. |
| 401 | ELB.1105 | Token invalid | Invalid token. | Contact customer service. |
| 401 | ELB.1109 | Authentication failed. | Real-name authentication failed. | Contact customer service. |
| 403 | ELB.1091 | Lb number larger than quota. | The number of load balancers exceeds the quota. | Request a higher quota or delete load balancers that are no longer needed. |
| 403 | ELB.1102 | Token is error, Authentication required. | The token is empty. | Enter a token that has not expired. |
| 403 | ELB.2001 | Create member failed, the total amount of members exceeds the system setting. | Failed to add the backend server because the number of backend servers reaches the limit. | Check the maximum number of backend servers. |

| Status Code | Error Codes | Error Message | Description | Solution |
|-------------|-------------|--|--|---|
| 403 | ELB.6091 | Request lb has more than user listener quota. | The number of listeners reaches the limit. | Request a higher quota or delete listeners that are no longer needed. |
| 403 | ELB.8962 | tenant %s does not support %s. | The feature is not supported. | Contact customer service. |
| 403 | ELB.9802 | Policy doesn't allow elb:logtanks:create to be performed. | Authentication failed. | Ensure that you have the permission to perform this operation. |
| 403 | ELB.9803 | Policy doesn't allow elb:loadbalancers:list to be performed. | Authentication failed. | Ensure that you have the permission to perform this operation. |
| 403 | ELB.9804 | Policy doesn't allow elb:loadbalancers:list to be performed. | Authentication failed. | Ensure that you have the permission to perform this operation. |
| 404 | ELB.1002 | Find lb failed. | The load balancer does not exist. | Change the load balancer ID. |
| 404 | ELB.8904 | %s %s could not be found. | Resource could not be found. | Please check the parameters. |
| 409 | ELB.8905 | Quota exceeded for resources: %s | No enough quota for resource. | Contact customer to expand quota. |
| 409 | ELB.8907 | Data conflict. For details about the error, see the returned information. | Data conflict. For details about the error, see the returned information. | Check your request based on the error message. |
| 500 | ELB.8906 | Internal error. For details about the error, see the returned information. | Internal error. For details about the error, see the returned information. | Contact customer service. |

8.2 Status Codes

Table 8-1 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 8-2 Error codes

| Status Code | Message | Description |
|-------------|-------------------------------|--|
| 400 | Bad Request | Invalid request URI. |
| | | Too long request header. |
| | | Invalid request body. |
| | | Unreleased fields in the request body. |
| 401 | Unauthorized | Authentication information unavailable in the request header. |
| | | Expired authentication information in the request header. |
| 403 | Forbidden | No permissions to access APIs. |
| 404 | Not Found | No available request URI. |
| | | No available requested resources. |
| 405 | Method Not Allowed | Method specified in the request not allowed. |
| 406 | Not Acceptable | Responses from the server failed to be received by the client. |
| 407 | Proxy Authentication Required | Proxy authentication required before the request can be processed. |
| 408 | Request Timeout | Request timed out. |
| 409 | Conflict | Failed to complete the request due to conflicts. |

| Status Code | Message | Description |
|-------------|--|--|
| | | The resource being accessed by another request. |
| 500 | Internal IaaS OpenStack network error. | Service internal error. |
| | | Server exception. |
| 501 | Not Implemented | Failed to complete the request because the server does not support the requested function. |
| 502 | Bad Gateway | Failed to complete the request because the server receives an invalid response from the upstream server. |
| 503 | Service Unavailable | Failed to complete the request because the system is temporarily abnormal. |
| 504 | Gateway Timeout | Gateway timed out. |

8.3 Monitoring Metrics

Overview

This section describes the namespace, the metrics that can be monitored by Cloud Eye, and dimensions of these metrics. You can use APIs provided by Cloud Eye to query the metrics of a monitored object and generated alarms.

Namespace

SYS.ELB

Metrics

Table 8-3 Metrics supported by ELB

| Metric ID | Name | Description | Value | Monitored Object | Monitoring Period (Raw Data) |
|-------------|------------------------|---|----------|--|------------------------------|
| m1_cps | Concurrent Connections | Load balancing at Layer 4: total number of TCP and UDP connections from the monitored object to backend servers Load balancing at Layer 7: total number of TCP connections from the clients to the monitored object Unit: N/A | ≥ 0 | <ul style="list-style-type: none">• Load balancer• Listener | 1 minute |
| m2_act_conn | Active Connections | Number of TCP and UDP connections in the ESTABLISHED state between the monitored object and backend servers You can run the following command to view the connections (both Windows and Linux servers): netstat -an Unit: N/A | ≥ 0 | | |

| Metric ID | Name | Description | Value | Monitored Object | Monitoring Period (Raw Data) |
|---------------|----------------------|--|----------------|------------------|------------------------------|
| m3_inact_conn | Inactive Connections | Number of TCP connections between the monitored object and backend servers except those in the ESTABLISHED state You can run the following command to view the connections (both Windows and Linux servers): netstat -an Unit: N/A | ≥ 0 | | |
| m4_ncps | New Connections | Number of connections established between clients and the monitored object per second Unit: Count/s | ≥ 0/ second | | |
| m5_in_pps | Incoming Packets | Number of packets received by the monitored object per second Unit: Packet/s | ≥ 0/ second | | |
| m6_out_pps | Outgoing Packets | Number of packets sent from the monitored object per second Unit: Packet/s | ≥ 0/ second | | |
| m7_in_Bps | Inbound Rate | Traffic used for accessing the monitored object from the Internet per second Unit: byte/s | ≥ 0 bytes/s | | |

| Metric ID | Name | Description | Value | Monitored Object | Monitoring Period (Raw Data) |
|---------------------|--------------------------|--|------------------|---|------------------------------|
| m8_out_Bps | Outbound Rate | Traffic used by the monitored object to access the Internet per second Unit: byte/s | ≥ 0 bytes/s | | |
| m9_abnormal_servers | Unhealthy Servers | Number of unhealthy backend servers associated with the monitored object Unit: N/A | ≥ 0 | <ul style="list-style-type: none"> Load balancer | 1 minute |
| ma_normal_servers | Healthy Servers | Number of healthy backend servers associated with the monitored object Unit: N/A | ≥ 0 | | |
| mb_l7_qps | Layer-7 Query Rate | Number of requests the monitored object receives per second Unit: Query/s | ≥ 0 query/s | <ul style="list-style-type: none"> Load balancer Listener | 1 minute |
| md_l7_http_3xx | Layer-7 3xx Status Codes | Number of 3xx status codes returned by the monitored object Unit: Count/s | ≥ 0 /second | <ul style="list-style-type: none"> Load balancer Listener | 1 minute |
| mc_l7_http_2xx | Layer-7 2xx Status Codes | Number of 2xx status codes returned by the monitored object Unit: Count/s | ≥ 0 /second | | |
| me_l7_http_4xx | Layer-7 4xx Status Codes | Number of 4xx status codes returned by the monitored object Unit: Count/s | ≥ 0 /second | | |
| mf_l7_http_5xx | Layer-7 5xx Status Codes | Number of 5xx status codes returned by the monitored object Unit: Count/s | ≥ 0 /second | | |

| Metric ID | Name | Description | Value | Monitored Object | Monitoring Period (Raw Data) |
|--------------------------|-----------------------------------|---|------------|------------------|------------------------------|
| m10_l7_http_other_status | Layer-7 Other Status Codes | Number of status codes returned by the monitored object except 2xx, 3xx, 4xx, and 5xx status codes Unit: Count/s | ≥ 0/second | | |
| m11_l7_http_404 | Layer-7 404 Not Found | Number of 404 Not Found status codes returned by the monitored object Unit: Count/s | ≥ 0/second | | |
| m12_l7_http_499 | Layer-7 499 Client Closed Request | Number of 499 Client Closed Request status codes returned by the monitored object Unit: Count/s | ≥ 0/second | | |
| m13_l7_http_502 | Layer-7 502 Bad Gateway | Number of 502 Bad Gateway status codes returned by the monitored object Unit: Count/s | ≥ 0/second | | |
| m14_l7_rt | Average Layer-7 Response Time | Average response time of the monitored object The response time starts when the monitored object receives requests from the clients and ends when it returns all responses to the clients. Unit: ms NOTE The average response time it takes to establish a WebSocket connection may be very high. This metric cannot be used as a reference. | ≥ 0 ms | | |


```
{
  "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).

9 Change History

| Released On | Description |
|-------------|---|
| 2024-04-19 | This issue is the first official release. |